MAPEHEAT MESH

Installation Guide

MAPEI

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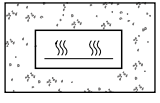
MAPEHEAT MESH

INTRODUCTION

Mapeheat Mesh is a self-adhesive electrical underfloor heating mat that should be installed and commissioned by a qualified electrician. If **Mapeheat Mesh** is purchased and/or installed by an end user, the installation should be approved by an electrician prior to commissioning. The commissioning report should be filled out completely during the installation and should be signed by the electrician during the commissioning. All measurements made by the end user during the installation should be validated by the electrician.

Mapeheat Mesh is an electrical underfloor heating mat and should only be installed for that purpose. **Mapeheat Mesh** must always be controlled by a thermostat equipped with a floor sensor. More on the thermostat and floor sensor can be found in the section “THERMOSTAT”.



Mapeheat Mesh should always be fully embedded in at least 6mm of self-levelling compound, tile adhesive or equivalent material appropriate for underfloor heating, ensuring that the system is a minimum of 3mm below the surface. Please read the complete installation instructions carefully. Pay attention to local circumstances, standards and regulations.

SAFETY INSTRUCTIONS

Mapeheat Mesh may not be cut to length, crossed or installed closer than the spacing of cables pre-installed in the mat. Do not install **Mapeheat Mesh** in areas that might be damaged by drilling. Do not install **Mapeheat Mesh** in areas that might be covered by fixed furniture where ventilation of the floor is hindered. The presence of the electrical underfloor heating cable should be made evident by the posting of the installation tag (yellow warning sticker provided with the product) in the fuse box or at the power connection fittings.

Avoid mechanical damage to the heating cable. In case of damage a repair kit can be used.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children should not play with the appliance. Cleaning and user maintenance should not be made by children without supervision.

THERMOSTAT

As **Mapeheat Mesh** is a constant wattage electrical underfloor heating mat, it is mandatory to have it controlled by a thermostat that is regulating the temperature by the use of an external floor temperature sensor. **Mapeheat Mesh** must be installed in combination with a thermostat that makes the product compliant with the Eco Design directive such as the **Mapeheat Thermo Basic**, **Mapeheat Thermo Touch** or **Mapeheat Thermo Connect**.

Ecodesign compliant	**Mapeheat Thermo Basic**	**Mapeheat Thermo Touch**	**Mapeheat Thermo Connect**
Week Timer	✓	✓	✓
Predictive heating	✓		✓
Open Window		✓	✓
Distance Control			✓

It is recommended to install the sensor cable in a conduit (included), so that it is possible to replace a defective sensor easily. The conduit must be sealed properly by means of the cap (included). The sensor itself should be located close to the surface immediately under floor tiles or other floor covering and should be positioned centrally between two heating cables. Strive for a positioning of the floor sensor as close as possible to the top floor surface for best temperature control. When installing two heating mats, the sensor should be positioned between these two mats.

TECHNICAL DATA

	Mapeheat Mesh 90 (90W/m²)	**Mapeheat Mesh 160 (160W/m²)**
Nominal voltage	AC 230 V	AC 230 V
Power output	up to 90 W/m²	up to 160 W/m²
Circuit breaker	See Fig. E and F	See Fig E and F
Min. bending radius	30 mm	30 mm
Min. cable spacing	90 mm	70 mm
Max. exposure temp.	+90°C	+90°C
Min. installation temp.	+5°C	+5°C
Conductor cross-section of cold lead cable	3 x 1,0 mm²	3 x 1,0 mm²
Length of cold lead cable	2,5 m	5,0 m
Approvals	CE UK CA	CE UK CA

FLOOR CONSTRUCTION

All material in the floor construction should be appropriate for underfloor heating. **Mapeheat Mesh** can be installed on top of different kind of subfloors:

Subfloor	**Mapeheat Mesh 90**	**Mapeheat Mesh 160**
sand:cement screed and concrete	✓	✓
Anhydrite/calcium sulphate based screed	✓	✓
Suitable insulation board	✓	✓
Wooden floor	✓	
Timber floor	✓	

Or any type of solid, stable and non combustible material.

Fig A:	1	Floor covering (tile or natural stone)
	2	Adhesive
	3	(Suitable Mapei waterproofing membrane – optional for shower areas)
	4	(Suitable Mapei smoothing compound – optional)*
	5	**Mapeheat Mesh** + Floor sensor inserted in sensor tube
	6	Suitable Mapei primer
	7	Subfloor
	8	Insulation
	9	Bearing construction
Fig B:	1	Floor covering (tile or natural stone)
	2	Adhesive
	3	(Suitable Mapei waterproofing membrane– optional for shower areas)
	4	(Suitable Mapei smoothing compound – optional)*
	5	**Mapeheat Mesh** + Floor sensor inserted in sensor tube
	6	Suitable Mapei primer (optional)
	7	Suitable insulation board ≥13mm
	8	Wooden plate
	9	Joist and insulation layer between the joists
Fig C:	1	Floor covering (Wood floor)
	2	Glue
	3	(Plywood – optional)
	4	Suitable Mapei smoothing compound
	5	**Mapeheat Mesh** + Floor sensor inserted in sensor tube
	6	Suitable Mapei primer (optional)
	7	Subfloor
	8	Insulation
	9	Bearing construction
Fig D:	1	Floor covering (Engineered wood installed floating)
	2	Foam underlayement
	3	Suitable Mapei smoothing compound
	4	**Mapeheat Mesh** + Floor sensor inserted in sensor tube
	5	Suitable Mapei primer (optional)
	6	Subfloor
	7	Insulation
	8	Bearing construction

* **Mapeheat Mesh** should be installed with a minimum of 3mm of a suitable Mapei leveling compound or tile adhesive above the system. Some floor coverings will require deeper installations of levelling compound. Always check with floor covering supplier.

Mapeheat Mesh can be installed under tile and natural stone. **Mapeheat Mesh** 90 (90W/m²) can also be installed under engineered wood and laminate flooring under certain conditions (see wooden floors for more details).

The maximum allowed thickness of the floor covering is 30mm. The thermal resistance of the floor construction above **Mapeheat Mesh** should be as low as possible (Max. 0,15 m² K/W). Avoid damaging **Mapeheat Mesh** during the installation. Avoid sharp objects and take caution when installing levelling/smoothing compounds. No airgaps are allowed in the levelling/smoothing compound.

Mapeheat Mesh should not be laid across expansion joints.

The connection between the heating cable and the cold lead must be located in the smoothing compound or adhesive and must not be pulled up into the conduit. Do not bend or pull the connection between the heating cable and the cold lead. Make sure the entire connection is embedded in the floor and not inserted in the wall together with the cold lead.

The subfloor should be clean, plain, stable and rigid, without cracks, sharp objects and free from contamination. Cracks are to be repaired prior to installation with a suitable Mapei repair material. Uneveness should be levelled out. The concrete subfloor must be completely dry before installing the floor heating system. **Mapeheat Mesh** can be fixed, if required, to the subfloor by means of glue or

staples. Fixing with staples is only allowed in the net, and never over the heating cable. Any metal shield, braid, screen or equivalent electrically conductive covering of the **Mapeheat Mesh** must be connected to an earthing terminal.

Caution: Do not lay heating cable in areas that might be damaged by drilling or might be covered by fixed furniture. Do not lay **Mapeheat Mesh** in areas subject to high mechanical loads or impact. Do not place **Mapeheat Mesh** under a heat source.

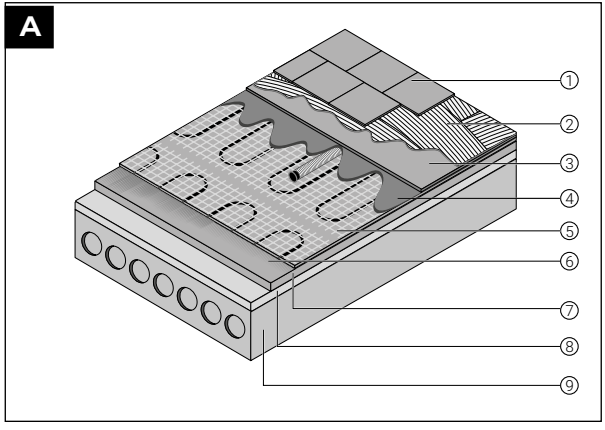
WOODEN FLOORS

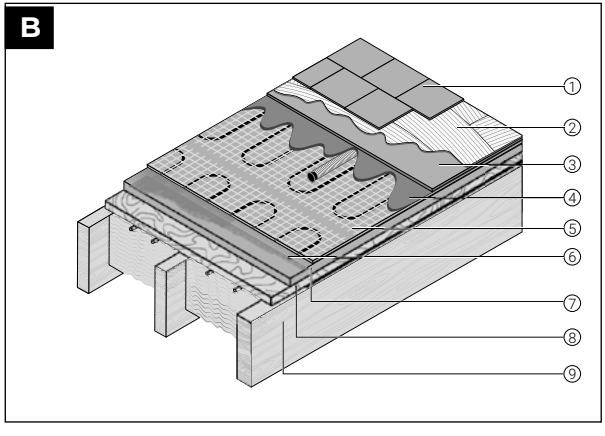
Mapeheat Mesh 90 (90W/m²) can be installed under engineered wood and laminate flooring under certain conditions.

For wooden floors **Mapeheat Mesh** 90 should be embedded in a layer of a suitable Mapei smoothing compound. The thermostat that controls the **Mapeheat Mesh** should be regulated by a floor sensor (or by room sensor with floor limiter). The floor sensor limit should be set to 27°C as maximum temperature. The type of wood should be compatible with underfloor heating.

There should not be any thermal barrier on top of the floor (like carpet or furniture).

Mapeheat Mesh 160 (160W/m²) must not be installed under wooden floors.





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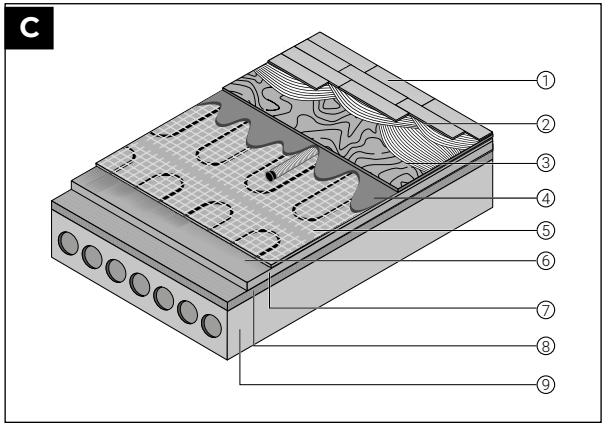

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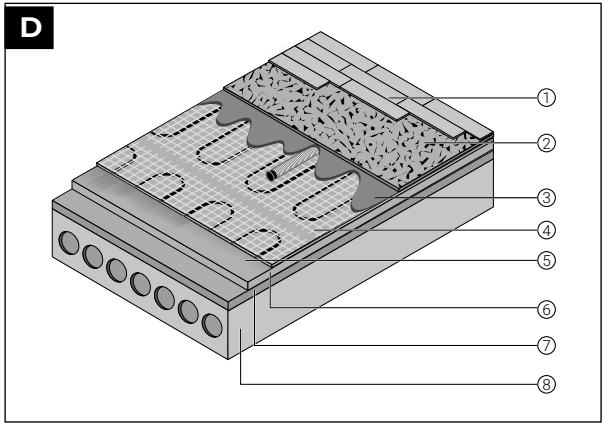
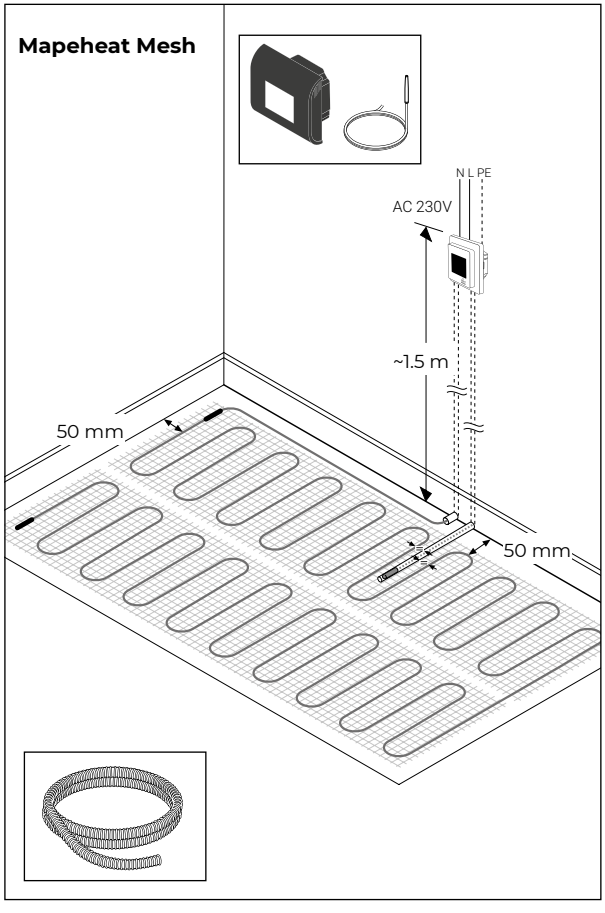


Mapeheat Mesh



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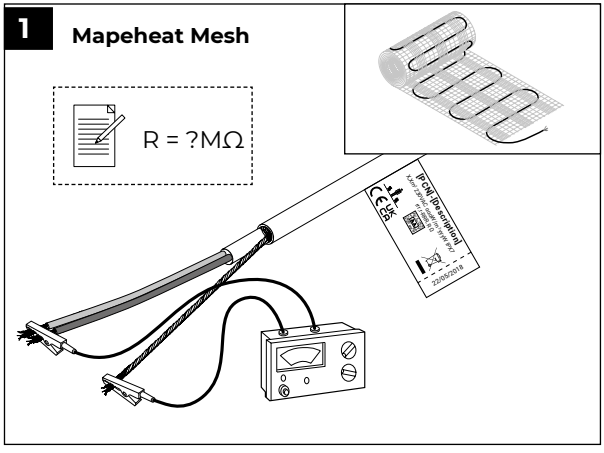

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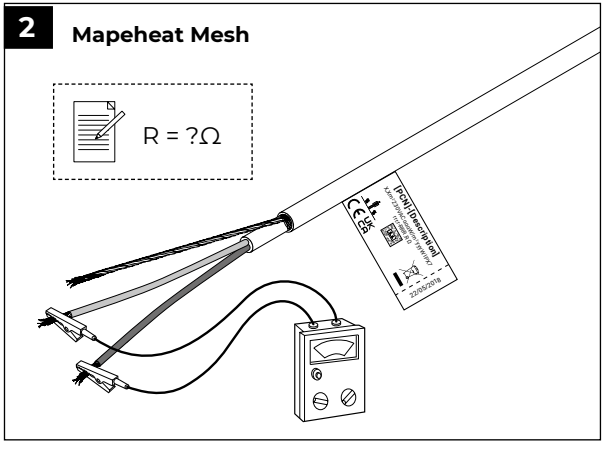

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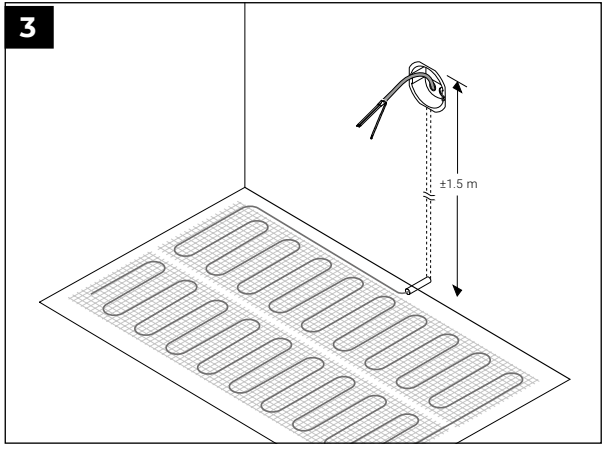

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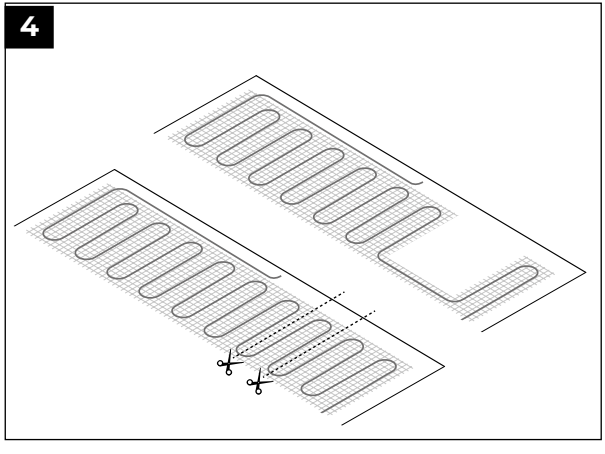

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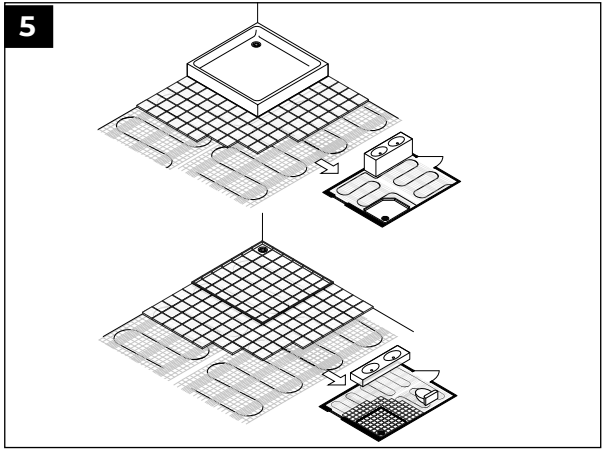

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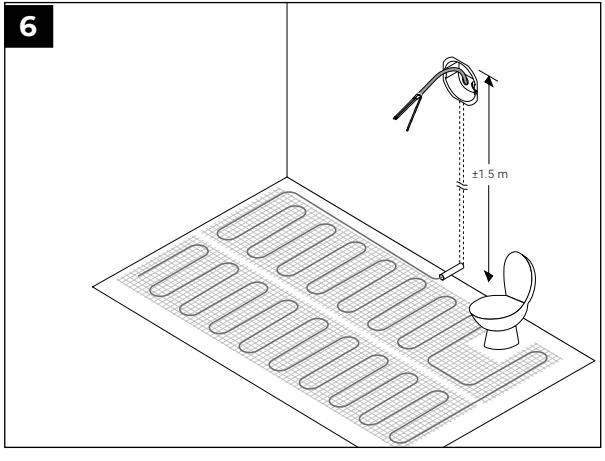

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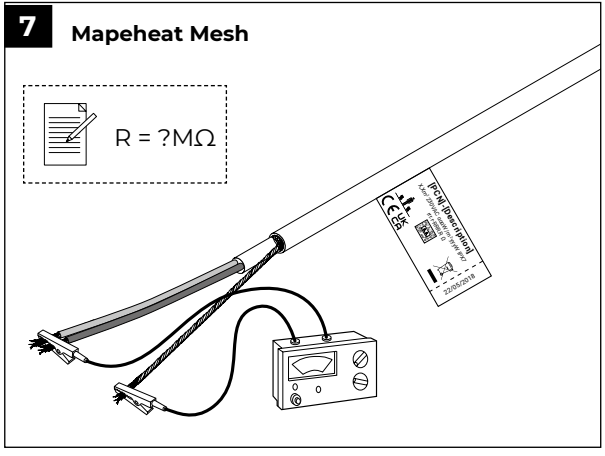

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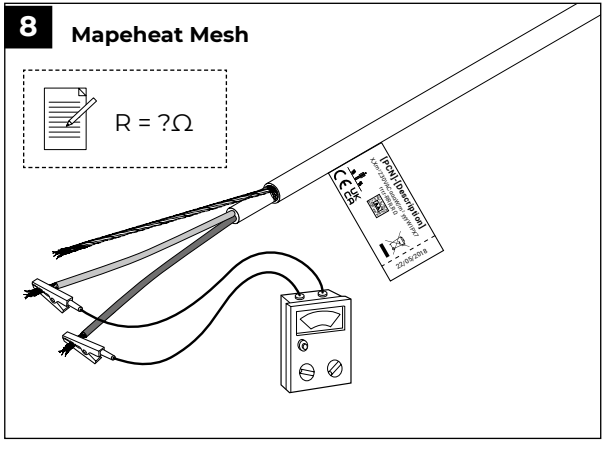

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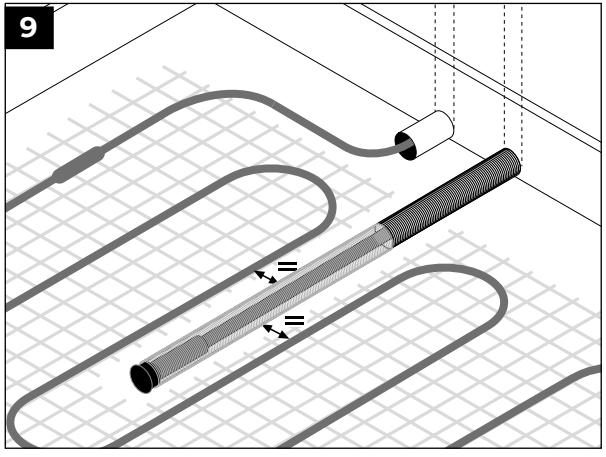

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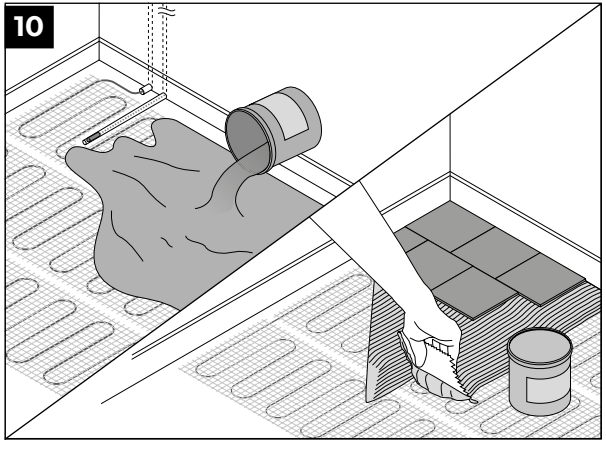

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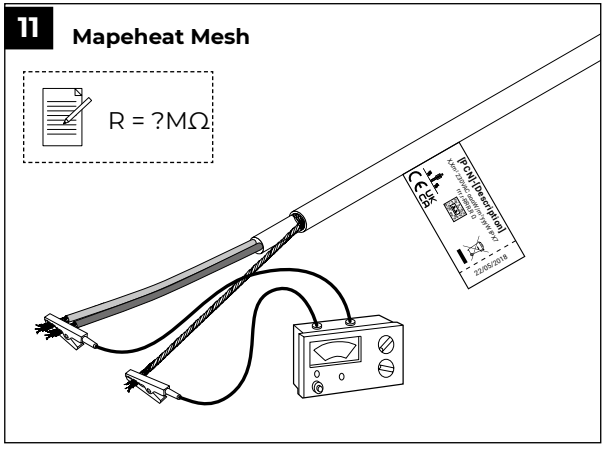

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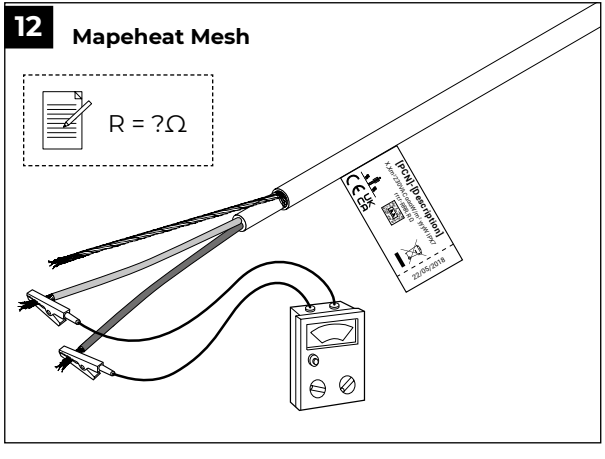

Mapeheat Mesh m² max.	**(*)**	**Thermostat**
33 m² **Mapeheat Mesh** 90 (90W/m²) 18 m² **Mapeheat Mesh** 160 (160W/m²)	13A max.	**Mapeheat Thermo Basic**, **Mapeheat Thermo Touch**, **Mapeheat Thermo Connect**

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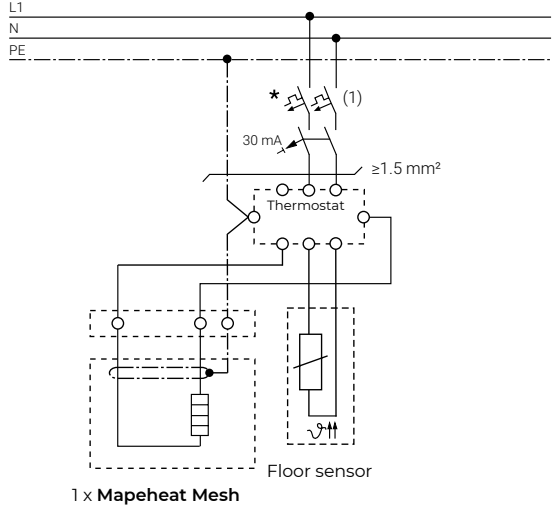

1 x **Mapeheat Mesh**

(1) Two- or four-pole electrical protection by circuit-breaker may be needed for local circumstances, standards and regulations

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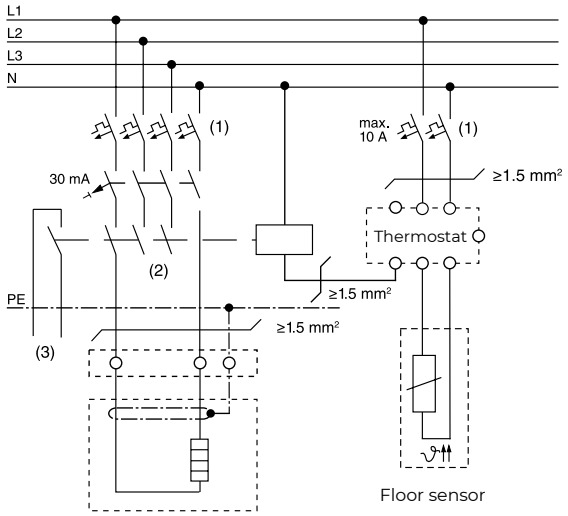

≥ 1 x **Mapeheat Mesh**

(1) Two- or four-pole electrical protection by circuit-breaker may be needed for local circumstances, standards and regulations
(2) Depending on the application, one- or three-pole circuit-breakers or contactors may be used
(3) Optional: Potential-free contact for connection to the BMS

END OF LIFE DISPOSAL

The thermostat must be disposed of as Waste Electrical and Electronic Equipment (WEEE directive) according to local regulations. The rest of the heating cable system must be disposed of as construction waste.

WARRANTY

Mapei offers a 12 year warranty for **Mapeheat Mesh**. Please check the Warranty Certificate and Registration Form (included in the Commissioning form or downloadable from www.mapei.co.uk/mapeheat) for more details. The commissioning form has to be fully filled out during the installation and approved by a qualified electrician. The commissioning form should be kept by the owner of the building in order to comply with electrical regulations and the warranty conditions. Proof of purchase must be kept and available to view at the initiation of any claim against warranty for **Mapeheat Mesh**.

In order to ease the identification of the product, a product identification sticker is included in the box and can be attached to the commissioning form.

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TECHNOLOGY FROM

nVent
RAYCHEM

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