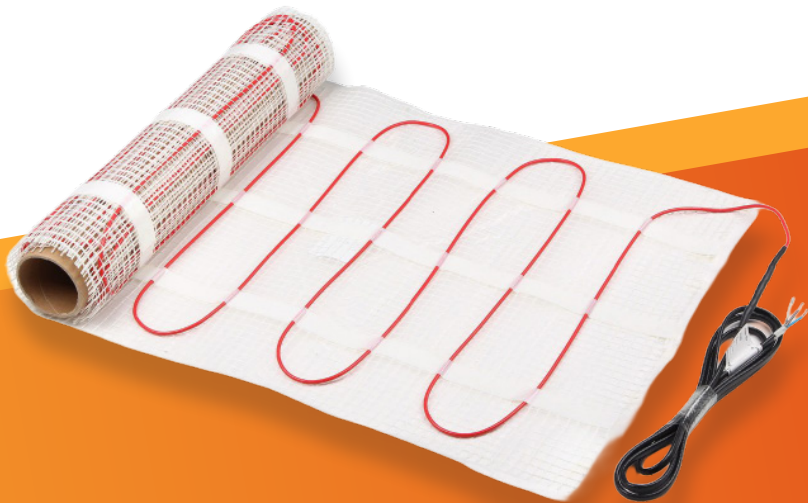




# HEATING MAT SYSTEM INSTALLATION MANUAL





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# 1 Important Safety Information



## **WARNING: Risk of Electric Shock and Fire**

Incorrect installation or damage to this heating cable system may result in electric shock, fire, serious injury, or damage to property. To reduce these risks, all instructions in this manual must be followed carefully.

- This system **must be used with a suitable thermostat.**
- **Do not connect the heating cable to a plug** or temporary power supply.
- **Do not turn the power on to the system while the cable is coiled.**
- This underfloor heating system **must be carried out by a suitably qualified and competent electrician** in accordance with BS 7671 (IET Wiring Regulations) and all applicable UK statutory requirements.
- The heating cable is **intended for fixed indoor underfloor heating installations only.**
- The cable **must be fully embedded** in mortar, thinset, concrete, or similar material.
- Do not install the heating cable in walls or ceilings.
- **Do not cut, shorten, cross, repair, modify, or splice** the heating cable.
- The minimum spacing between adjacent cable runs is **60 mm.**
- The minimum installation temperature is **5°C.**
- Take care to ensure the cable is not damaged by **nails, screws, fixings, or sharp objects**, either during installation or future floor works.

If the heating cable or any part of the system is **damaged at any time, it must not be used and must be replaced.**

Where installed in bathrooms or other special locations, installation must comply with the relevant requirements of **BS 7671.**

Failure to follow these instructions may void the warranty and create a serious safety hazard.

## 2 General Information

### 2.1 Use of This Manual

This manual explains how to:

- Design your heated floor area
- Select the correct heating cable
- Install and commission the system safely

Before installation, **also read the Thermostat Installation and Operation Manual** supplied with your thermostat.

For further assistance, contact:

TrueHeat

Email: [mail@TrueHeat.co.uk](mailto:mail@TrueHeat.co.uk)

Website: [www.TrueHeat.co.uk](http://www.TrueHeat.co.uk)

### 2.2 Safety Guidelines

The safety and reliability of this floor heating system depend on **correct design, installation, and testing**. Incorrect handling or installation can damage the heating cable and create a risk of fire or electric shock.

Always pay special attention to instructions marked:



**IMPORTANT or WARNING**

### 3 Measuring Electrical Resistance (Very Important)

The electrical resistance of the heating cable **must be measured and recorded four times during installation:**

1. Out of the box
2. After laying the cable on the floor, or in a decoupling membrane
3. After embedding in mortar / self-levelling compound or after the final floor finish has been laid
4. After final connection (before connecting to the mains)

Failure to measure and record these values will **void the warranty.**

#### How to Measure

- Measure resistance between the brown and blue wires using a suitable multimeter
  - The value must be within -5% to +10% of the value in the Product Selection Table
- Measure resistance using an insulation resistance meter, between:
  - Brown ↔ earth
  - Blue ↔ earth
  - Both must read **infinity (open circuit)**

If readings are outside these values, **stop installation and contact TrueHeat.**

## 4 Lifetime Warranty Summary

TrueHeat provides a **lifetime warranty** to the original purchaser on the heating cable against defects in materials and workmanship, starting from the date of purchase. (See the back of this book for a comprehensive guide to the warranty)

or online: **[www.TrueHeat.co.uk/warranty](http://www.TrueHeat.co.uk/warranty)**

The warranty is valid only if:

- The warranty certificate is completed and returned
- Resistance readings are recorded at all required stages
- The system is installed exactly in accordance with this manual

# 5 Heating Mat System Overview

## 5.1 Technical Specifications

- Cable type: Twin conductor
- Rated voltage: 230 V
- Output: 160W or 200W per m<sup>2</sup>
- Cable spacing within the foil heating mat: 50 mm
- Cable diameter: 1 mm
- Conductor insulation: Fluoropolymer
- Outer insulation: Nylon
- Maximum ambient temperature: 30°C
- Minimum installation temperature: 5°C
- Cold lead: 2-wire + earth braid, 2.5 m length
- Indoor use only

## 5.2 Typical Installations

The heating cable may be installed:

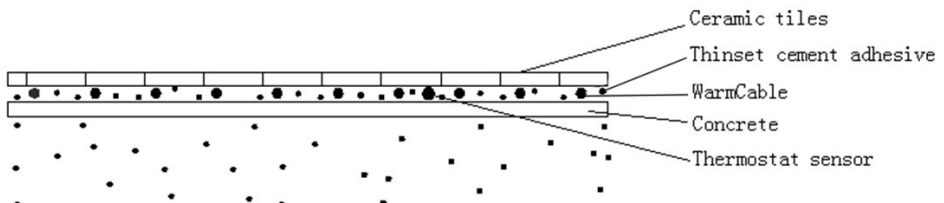
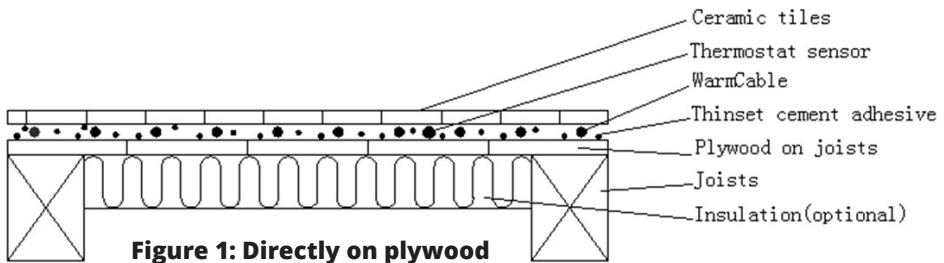
- Directly on concrete (with suitable insulation beneath)
- Directly on plywood
- Embedded in thinset or self-levelling compound
- Within a decoupling membrane

Compatible floor finishes include:

- Tile
- Engineered wood
- Laminate
- Vinyl
- Linoleum
- Carpet (check manufacturer limits)



**Always consult the floor covering manufacturer for maximum permitted floor temperatures.**



### **WARNING**

For wood, laminate, vinyl, or linoleum floor finishes, **always consult the floor covering manufacturer** for any special installation requirements, including maximum permitted floor temperatures.

## **IMPORTANT – Installation Requirements**

Read **all instructions in this manual carefully** before installing the heating cable system.

**Any metal structures, reinforcement, or conductive materials** that support or are in contact with the heating cable **must be correctly earthed** in accordance with current UK Wiring Regulations (BS 7671).

If you are unsure about any aspect of installation or operation, **contact TrueHeat for advice** before proceeding.

# **6 Floor Heating Design & Product Selection**

## **Step 1: Measure the Heated Area**

Measure only the free floor area.

Do not include areas beneath permanent fixtures such as:

- Baths
- Showers
- Toilets
- Cabinets
- Appliances
- Or any furniture that has less than 50mm ground clearance

Subtract 10% from your figure to allow for perimeter clearances around the edge of the room.

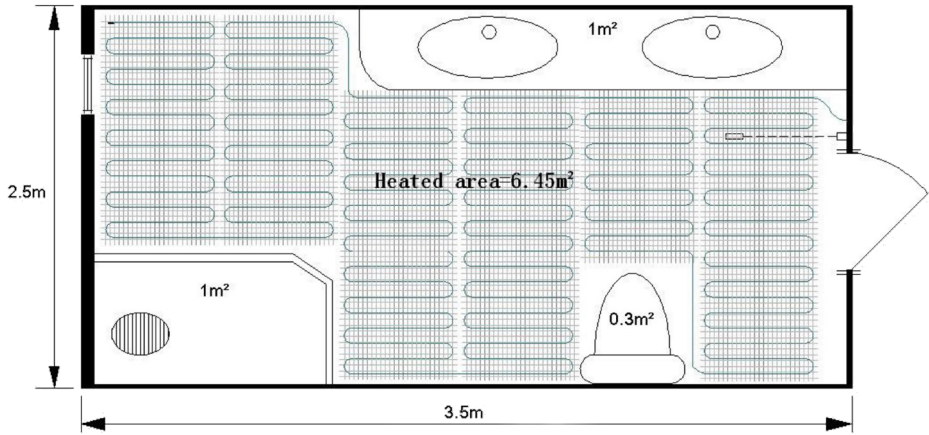
## **Step 2: Confirm Supply Voltage**

The system is designed for **nominal 230 V supply** in accordance with UK electrical standards.

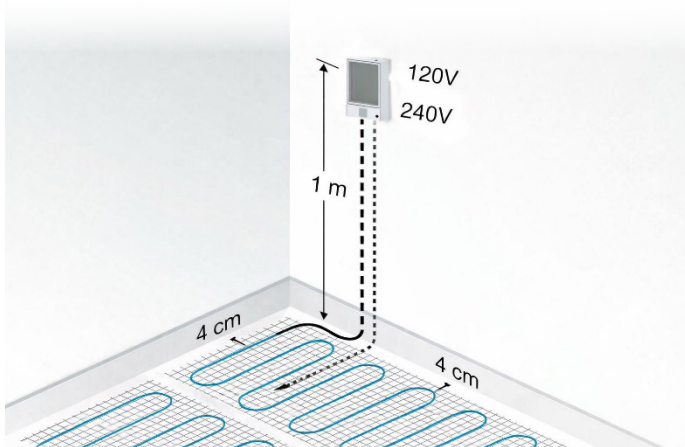
- Operating at 220 V reduces output by approx. 8.5%
- Operating at 240 V increases output by approx. 8.9%

### Step 3: Plan the Layout

- Maintain the designed cable spacing
- Do not alter the spacing during installation
- Position the thermostat so it can be reached by:



**Figure 3: Heated area example**



**Figure 4: Typical cold lead and floor temperature sensor**

#### Step 4: Select the Correct Heating Mat

- Choose a heating mat that:
- Does **not exceed** the heated area (It cannot be cut)
  - Matches your required wattage

Use the product section table below

230v	Heated Area	Heated Area	Mat Dimensions	Mat Dimensions	Watts 160 W/m <sup>2</sup>	Amps	Ohms
Catalogue Number	(m <sup>2</sup> )	(sq.ft.)	(m×m)	(in×ft)			
HM160/1	1.0	10.8	0.5×2	20×6.5	160	0.7	330.6
HM160/1.5	1.5	16.1	0.5×3	20×9.7	240	1.0	220.4
HM160/2	2.0	21.5	0.5×4	20×12.9	320	1.4	165.3
HM160/2.5	2.5	26.9	0.5×5	20×16.1	400	1.7	132.3
HM160/3	3.0	32.3	0.5×6	20×19.4	480	2.1	110.2
HM160/3.5	3.5	37.7	0.5×7	20×22.6	560	2.4	94.5
HM160/4	4.0	43.1	0.5×8	20×25.8	640	2.8	82.7
HM160/5	5.0	53.8	0.5×10	20×32.3	800	3.5	66.1
HM160/6	6.0	64.6	0.5×12	20×38.8	960	4.2	55.1
HM160/7	7.0	75.3	0.5×14	20×45.2	1120	4.9	47.2
HM160/8	8.0	86.1	0.5×16	20×51.7	1280	5.6	41.3
HM160/10	10.0	107.6	0.5×20	20×64.6	1600	7.0	33.1
HM160/12	12.0	129.2	0.5×22	20×77.5	1920	7.3	27.6

200  
W/m<sup>2</sup>

HM200/1	1.0	10.8	0.5×2	20×6.5	200	0.9	264.5
HM200/1.5	1.5	16.1	0.5×3	20×9.7	300	1.3	176.3
HM200/2	2.0	21.5	0.5×4	20×12.9	400	1.7	132.3
HM200/2.5	2.5	26.9	0.5×5	20×16.1	500	2.2	105.8
HM200/3	3.0	32.3	0.5×6	20×19.4	600	2.6	88.2
HM200/3.5	3.5	37.7	0.5×7	20×22.6	700	3.0	75.6
HM200/4	4.0	43.1	0.5×8	20×25.8	800	3.5	66.1
HM200/4.5	4.5	48.4	0.5×9	20×29.1	900	3.9	58.8
HM200/5	5.0	53.8	0.5×10	20×32.3	1000	4.3	52.9
HM200/6	6.0	64.6	0.5×12	20×38.8	1200	5.2	44.1
HM200/7	7.0	75.3	0.5×14	20×45.2	1400	6.1	37.8
HM200/8	8.0	86.1	0.5×16	20×51.7	1600	7.0	33.1
HM200/9	9.0	96.9	0.5×18	20×58.1	1800	7.8	29.4
HM200/10	10.0	107.6	0.5×20	20×64.6	2000	8.7	26.5
HM200/12	12.0	129.2	0.5×22	20×77.5	2400	10.4	22.0

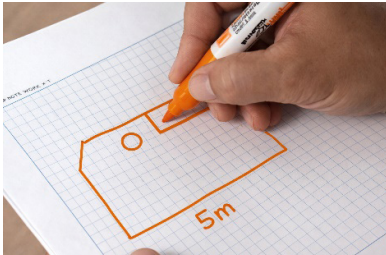
# 7 Installation Instructions

## Tools Required

- Scissors
- Utility knife
- Wire strippers
- Tape measure
- Screwdriver
- Digital multimeter
- Insulation resistance meter

Floor-specific tools and materials may also be required.

## Installation Steps (Summary for laying on floor)



1. Plan and document the layout



2. Mark the layout on the floor



3. Install floor temperature sensor in conduit



4. Prepare and clean subfloor

5. Measure resistance (1st time)  
See Section 8 for full details



6. Lay heating mat

7. Measure resistance (2nd time)

8. Install floor covering

Before proceeding, ensure that the floor temperature sensor conduit has been correctly installed and positioned in accordance with Step 3.

### **Tiled Floor Coverings**

Where ceramic, porcelain or stone tiles are to be installed, proceed by embedding the heating cables in a suitable thin-set tile adhesive, following the adhesive manufacturer's instructions. Care must be taken not to damage the heating mat when trowelling on the waterproof flexible tile adhesive.

Ensure that the tile adhesive fully encapsulates the heating cable and covers the entire height of the cable as the tiles are laid.

### **Wood, Engineered or Laminate Floor Coverings**

Where wood, engineered wood or laminate floor coverings are to be installed, it is recommended that the flooring manufacturer is consulted prior to installation to confirm suitability and installation requirements.

For wooden floor coverings, a minimum of 5 mm of suitable self-levelling compound must be applied over the heating cable. The heating element must be fully embedded or protected in accordance with the floor construction and the manufacturer's instructions to prevent mechanical damage.

Ensure that the self-levelling compound is allowed to dry completely and that all residual moisture has fully dissipated, in accordance with the drying times specified by the compound manufacturer.

## Important

The underfloor heating system must not be energised until all tile adhesive or self-levelling compound has fully cured. A minimum curing period of 14 days is recommended before the system is switched on.

9. Measure resistance (3rd time)
10. Make final electrical connections and final resistance test.

## Electrical Connection and Final Testing

Before connecting the system to the power supply, the electrician must take the final (fourth) set of resistance readings. These readings must be recorded on the warranty card in accordance with the relevant installation step.

The connection of the power supply and the thermostat must be carried out by a suitably qualified and competent electrician in accordance with BS 7671 (IET Wiring Regulations) and all applicable UK statutory requirements. The system is designed for nominal 230 V supply in accordance with UK electrical standards.

The electrician shall then connect the floor temperature sensor to the thermostat and complete the connection of the power supply in accordance with the manufacturer's instructions and applicable electrical regulations.

## Note

The electrician must ensure the appropriate circuit breaker identification label is completed to clearly identify the circuit supplying the underfloor heating system. The circuit supplying the underfloor heating system must be protected by a suitable **RCD** in accordance with **BS 7671**. An appropriate means of electrical isolation must be provided for the underfloor heating system in accordance with **BS 7671**

11. Complete warranty paperwork online at [www.TrueHeat.co.uk/warranty](http://www.TrueHeat.co.uk/warranty)
12. Gradually bring system into use



**The underfloor heating system must not be energised until all mortar or levelling compounds are fully cured. (minimum 14 days).**

# 8 Commissioning

## Important:

If the floor covering is not installed immediately, protect the heating mats with cardboard. Immediately before installing the floor, test the heating mat to ensure no damage has occurred.

To qualify for the **Lifetime Warranty**, all required tests must be performed, recorded on the warranty card, and retained for reference.

The following tests must be carried out four times during installation:

- **8.1 Insulation Resistance Test**

- Confirms cable insulation integrity.
- Both power cables to the red test lead, the earth to the black test lead and set the tester to 1000V, it should give OL (Infinity) or no reading at all, in accordance with the test procedure described.



- **8.2 Heating Cable Resistance Test**

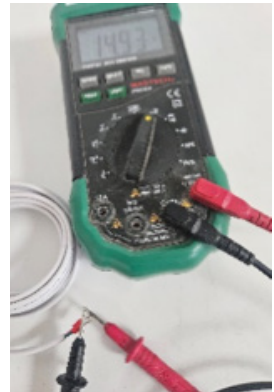
- Confirms circuit integrity.
- Red to Live (Brown) Black to Neutral (Blue) set to 200 or 2000 Ohms, the reading should be no more than -5% or +10% of the stated ohms on the product label and box.



### 8.3 Sensor Resistance Test

- Confirms sensor functionality (9–25 kΩ).
- The Reading will change dependant on the room temperature. Contact TrueHeat if you have any doubt about the reading of the floor sensor.

If any test fails, stop and contact TrueHeat.



## 9 Troubleshooting

Symptom	Probable Causes	Corrective Action
Floor doesn't heat	No voltage.	Check circuit breaker.
	Circuit breaker tripped.	Ensure that there are not too many mats or other appliances connected on the same circuit. The underfloor heating mat may require a dedicated circuit. See the Product Selection Table of this manual.
	Ground-fault tripped in the thermostat.	Refer to Thermostat Installation and Operation Manual.
	Thermostat not turned on.	Refer to Section 4 of this manual, and the Thermostat Installation and Operation Manual.
	Cable not connected to Thermostat.	Refer to Thermostat Installation and Operation Manual.
	Floor temperature sensor not connected.	Refer to Thermostat Installation and Operation Manual.
	Faulty floor sensor.	Contact TrueHeat mail@trueheat.co.uk
Floor warm all the time	Clock not set correctly.	Refer to Thermostat Installation and Operation Manual.
Floor not warm enough	Thermostat setting not set correctly.	Refer to Thermostat Installation and Operation Manual.
Installation instructions not available		Contact TrueHeat at mail@trueheat.co.uk

## 10 Disposal

- Dispose of this product in accordance with local regulations for electrical equipment.
- Do not dispose of with household waste.

## TrueHeat Manufacturer's Lifetime Warranty

(UK Consumer Warranty)

For the purposes of this warranty, the term "heating cable" refers to the fixed electric heating element supplied by TrueHeat for installation beneath floor finishes.

### 1. Who This Warranty Is For

- This warranty is provided by TrueHeat to the original end user purchaser of the TrueHeat underfloor heating cable for use in domestic or residential applications within the United Kingdom.
- This warranty is non-transferable and applies only to the original installation at the original address.

### 2. Statutory Rights

- This warranty is provided in **addition to your legal rights under the Consumer Rights Act 2015.**
- Your statutory rights **are not affected** by this warranty.

### 3. What Is Covered

TrueHeat warrants that the underfloor heating cable will be free from defects in materials and manufacture for the lifetime of the product, starting from the date of purchase, provided that:

- The defect was present at the time the product was supplied

The product has been installed and used in accordance with TrueHeat's installation instructions and applicable UK regulations

## **4. Conditions of Warranty**

This warranty is conditional upon:

- Completion and return (or online submission) of the TrueHeat warranty registration form. All submissions will receive a warranty certificate.
- All required resistance test readings being recorded at the specified installation stages
- Installation being carried out by a suitably qualified and competent installer in accordance with current UK electrical regulations
- Failure to meet these conditions may result in the warranty claim being declined, but does not affect your statutory rights.

## **5. What Is Not Covered**

This warranty does not apply to defects or failures resulting from:

- Incorrect or non-compliant installation
- Accidental damage, misuse, abuse, or neglect
- Alteration or modification of the product
- Failure to follow installation, testing, or operating instructions
- Normal wear and tear

## **6. Inspection and Claims Process**

If you believe the product is defective, you must contact TrueHeat Customer Services before removing or replacing the product.

TrueHeat may require the heating cable to be:

- Inspected & Tested in situ, or
- Returned to TrueHeat or an authorised service partner for examination (if not yet installed)
- You may be required to demonstrate that the defect was present at the time of supply.

## **7. Remedy**

Where a valid warranty claim is accepted, TrueHeat will, at its discretion:

- Repair the defective heating cable, or
- Supply a replacement heating cable of equivalent specification
- This warranty applies to the heating cable only.

## **8. Installation and Reinstatement Costs**

Where a manufacturing defect is confirmed, TrueHeat will be liable for reasonable costs directly related to:

- Repair or removal of the defective heating cable, and
- Installation of a replacement heating cable
- TrueHeat's liability for such costs is limited to a maximum of five (5) times the original purchase price of the product per claim.

## **9. Consequential Loss**

Subject to your statutory rights, TrueHeat shall not be liable for indirect or consequential losses, including loss of profit, loss of use, or other economic loss arising from the failure of the product.

## **10. Limitations of Liability**

Nothing in this warranty limits or excludes TrueHeat's liability for:

- Death or personal injury caused by negligence
- Fraud or fraudulent misrepresentation
- Any liability which cannot be excluded or limited under UK law

## **11. How to Make a Warranty Claim**

To submit a warranty claim, please contact TrueHeat Customer Services here <https://www.TrueHeat.co.uk/contact> and provide:

1. Details of the suspected manufacturing defect
2. Date of purchase and date of installation
3. Installer and electrician details (where applicable)
4. Recorded resistance test readings
5. Proof of purchase and product serial number

TrueHeat will provide you with a claim reference number and advise on the next steps.

## **12. Governing Law**

This warranty is governed by the laws of England and Wales and applies to products installed within the United Kingdom.

## **13. General Information**

TrueHeat reserves the right to make changes to product design and specifications without prior notice, provided such changes do not adversely affect products already supplied.

All trademarks referenced are the property of their respective owners

# Notes

A series of horizontal dotted lines for writing notes.





TRUEHEAT

The logo features three stylized, white, wavy vertical lines above the word "TRUEHEAT" in a white, uppercase, sans-serif font. The background is a solid orange color with a subtle gradient from light to dark.