

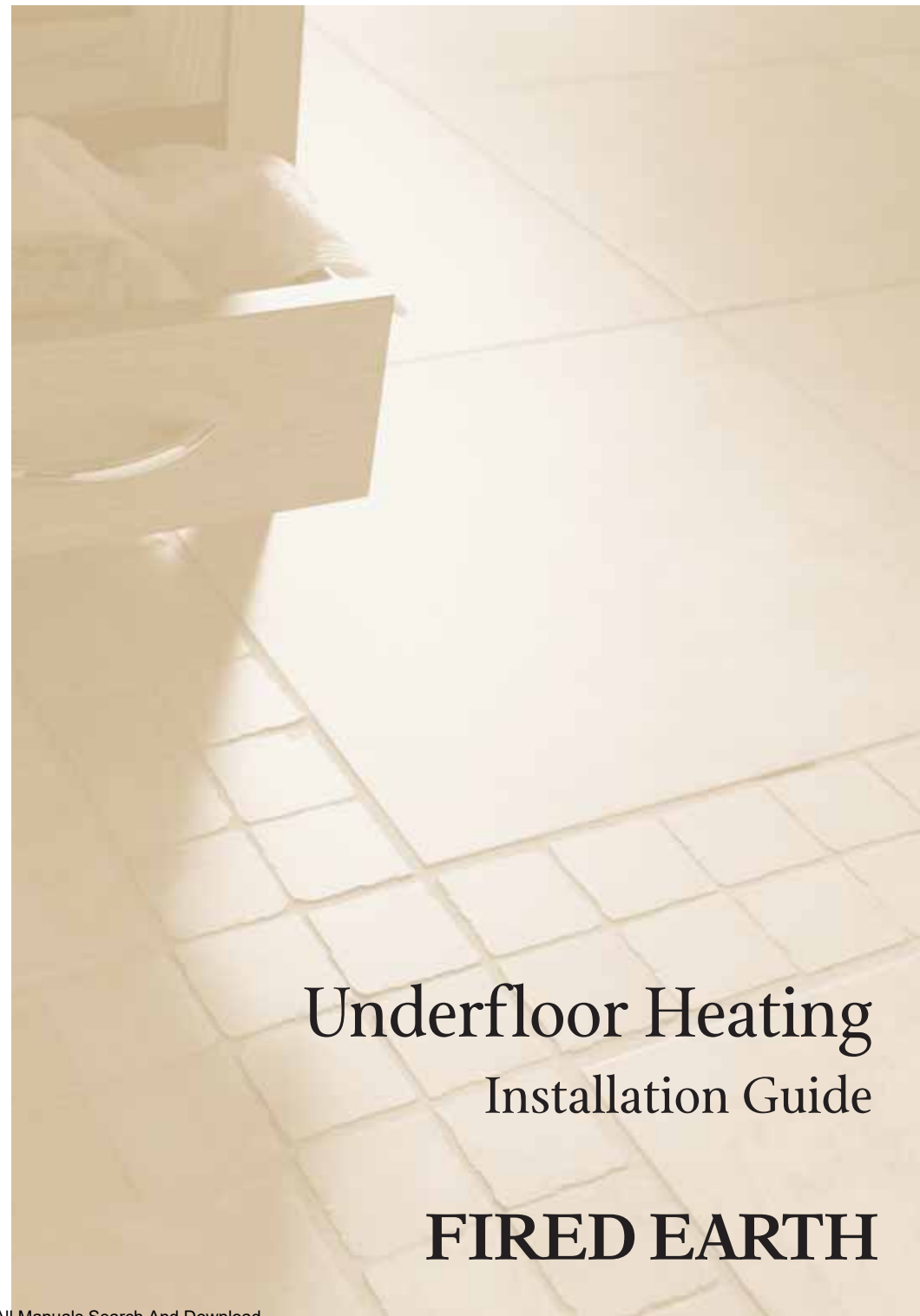


[www.firedearth.com](http://www.firedearth.com)

## **FIRED EARTH**

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# Underfloor Heating Installation Guide

## **FIRED EARTH**

## Contents

Electrical Underfloor Heating	4
Fired Earth Underfloor Heating	4
Recommendations and Technical	7
Installing Your System	8
Specifications	9
Glossary	10

# Underfloor Heating Installation Guide

Underfloor heating was invented by the Romans. They realised it was the most efficient and effective form of heating, this is as true today as it was then.

The Fired Earth range of electric systems take the Roman genius into the modern era, enabling underfloor heating to be laid simply and efficiently in new and existing buildings. Fired Earth have systems that can be used as the sole source of heating or simply just to warm an otherwise cold floor. They are suitable for use with all Fired Earth floor tiles.

## Electrical Underfloor Heating

There are many benefits to our electric underfloor heating system:

- All our cables are double insulated with an internal earth sheathing. The systems have been tested and comply with worldwide standards and regulations.
- They are very thin usually adding only 5mm in total to the depth of the floor.
- They are 100% efficient.
- They free up valuable wall space.
- They are fully controllable with rapid response times when installed with suitable thermal boards and are run independently of your central heating system.
- Radiant heat reduces drafts and is more effective than convective heating.

- They are simple and quick to install

With an extensive range of sizes and systems you can install electric underfloor heating in any size room or location.

### Electric underfloor heating is an affordable luxury

Buying and installing underfloor heating is easy, all you need is the correct size heating mat, a programmable Thermostat and an RCD (this is not required if you already have one on your main electricity board).

All installations should be surveyed by a suitably qualified electrician to check for the availability of sufficient supply and that the installation will meet current IEE regulations.

## Fired Earth Underfloor Heating

There are three types of underfloor heating available. The descriptions below will help you choose the most suitable type for your particular installation.

**Floor Warming mat** – setting the standard in underfloor heating. Provides comfortable warmth in all Fired Earth tiled floors.

**Sole Source heating** – a system powerful enough to be the sole form of heating even in a conservatory.

**Bathroom Mat** – an earth braided system for use in all bathrooms including 'wet' areas.

For your convenience, a full estimating and installation service is available. Simply give drawings to your local store. The Fired Earth range is designed for use under tiled floors only.

## Floor Warming Mat

160 watts/m<sup>2</sup>

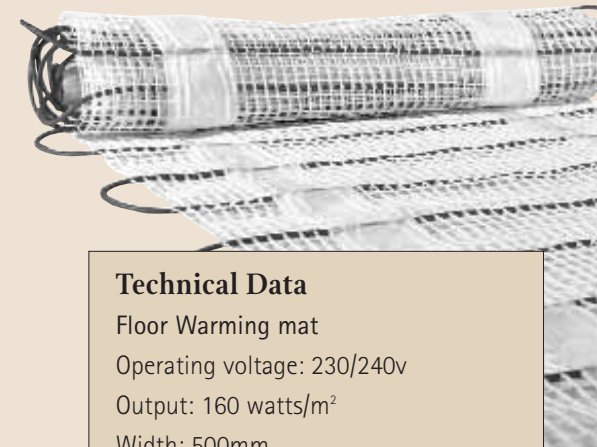
This mat makes a warm floor underfoot an affordable luxury, making any tiled surface in any room a joy to walk on.

It is widely accepted that heating mats are superior to loose cable systems, as they are much quicker to install and have regulated cable widths, so you always get a good even heat spread with no hot or cold spots.

- Fabric backing for better installation
- Powerful 160 watts/m<sup>2</sup> output to warm even the thickest tile
- Only one connection cable for easy installation
- Adds only 5mm to the floor depth
- Surpasses international safety standards

- 10 year guarantee
- No electro magnetic field

The Floor Warming mat has a fabric backing allowing adhesives to be fully absorbed, thereby allowing a perfect bond between the tiles and subfloor.



### Technical Data

Floor Warming mat

Operating voltage: 230/240v

Output: 160 watts/m<sup>2</sup>

Width: 500mm

Size: 2-10m<sup>2</sup>

Guarantee: 10 years

## Sole Source Heating

200 watts/m<sup>2</sup>

The Sole Source mat has been designed for sole source of heating in conservatories, extensions and other areas. At 200 watts/m<sup>2</sup> this mat system is one of the most powerful on the market. The system:

- Is ultra thin, adding only 5mm to the floor depth
- Is available in 500mm width

- Can be installed either directly beneath the tiles or in the screed for off peak electricity use.

If using underfloor heating for sole source heating, it is very important to have insulation either under the screed or directly below the heating.

To make sure the heat output is sufficient we offer a free planning service, whereby we can calculate both the heat requirement

of the area and the amount of heating mat that needs to be installed. In rare cases it may be that additional heating is required.



### Bathroom Mat

160 watts/m<sup>2</sup>

Although any of our underfloor heating products are suitable for use in bathrooms we have developed a system which is specifically designed for wet bathrooms. This system is easy to install, extremely robust and available in 300mm widths giving a better floor coverage around bathroom furniture. It is ultra thin, adding only 5mm to the depth of the floor and is rated at a powerful 160 watts/m<sup>2</sup>. This system has been designed with a completely unique external earth braid and grid system to comply with all forthcoming



#### Technical Data

Sole Source Heating

Operating Voltage: 230/240v

Output: 200 watts/m<sup>2</sup>

Width: 500mm

Size: 2-8m<sup>2</sup>

Guarantee: 10 years

European and International guidelines and directives. This is the safest underfloor heating system in the world.

- Ideal for bathrooms as they quickly dry wet floors.
- Fitted with unique external earth braid for additional safety even in shower areas.
- 300mm wide for better coverage and easier installation.
- Fabric backing for better installation.

#### Technical Data

Bathroom Mat

Operating Voltage: 230/240v

Output: 160 watts/m<sup>2</sup>

Width: 0.3m

Size: 0.9-3.6m<sup>2</sup>

Guarantee: 10 years

The Bathroom range has been tested and emits a magnetic field that is lower than international safety limits.

## Recommendations and Technical

What else do I need to install an underfloor heating system?

All you need is the correct heating system, a control (timer/thermostat), an RCD and the adhesives/leveller to stick the system onto the sub-floor.

What size heating system do I need?

It is important to make sure that you have the correct size heating system. Underfloor heating is not laid under permanent furniture (kitchen cabinets and sanitary ware), just in the free floor space. For example, the bathroom in the diagram on the left is 4.5m<sup>2</sup> of floor area, but the actual amount of underfloor heating required is only 1.5m<sup>2</sup>.

What controls do I need?

We recommend installing a timer/thermostat; this will allow you total control of your heating whilst ensuring

maximum efficiency. Our thermostats are covered by a one year guarantee.



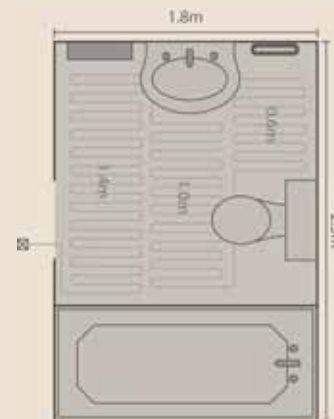
What electrical/subfloor preparations do I need to make?

We recommend a qualified electrician carry out all electrical work. The electrician will need to provide the correct size spur and deep single back boxes for the control and Residual Current Device (RCD). An RCD is a safety device (circuit breaker) which is essential for the validation of the guarantee and to comply with IEE guidelines. Prepare the sub-floor ready for the final floor finish. An RCD is only required if you do not already have one on the mains. The wiring to the thermostat should be channelled into the wall and protected by plastic trunking or conduit.

### Free Planning Service

We can calculate for you, both the heat requirement of the area and the amount of heating mat that needs to be installed.

Please ask instore for information about our free planning service.



## Installing your system

We offer a full installation service if required. A comprehensive installation guide is provided with our mats. Copies are available on request.

Will it help to have insulation below the heating mat?

Insulation will make the property more thermally efficient and the heating more effective. Tile backer insulation boards are available in thicknesses of as little as 10mm, which are ideal for floor insulation.

What are the running costs?

Basically, a kilowatt of electricity (1000 watts) costs about 7p per hour at peak rate (consult your electricity board for accurate prices).

Our underfloor heating mats are rated between 160 watts and 200 watts per square metre. Detailed below are calculations based on the worst case scenario, the floor having a concrete

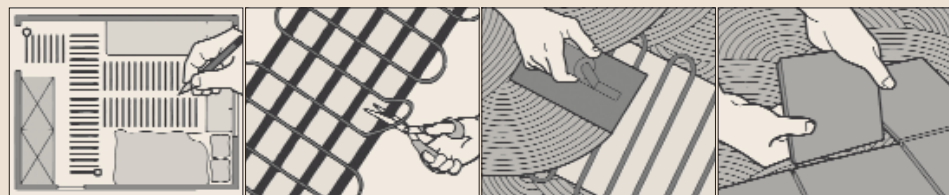
subfloor without insulation (with insulation or tile backer boards running costs can be cut by as much as 50%).

- 1m<sup>2</sup> of 160w costs approx. 1.12 pence/hour
- 1m<sup>2</sup> of 200w costs approx. 1.40 pence/hour

The programmable thermostat allows you to set the temperature of the floor for comfort and economy. The heating can also be programmed to switch on or off so the floor is warm just when you need it!

What happens if the system goes wrong?

Once the underfloor heating is installed and the floor covering is laid on top, the heating mat will not malfunction and is covered by our 10 year guarantee. If the fault is diagnosed once the floor is down, it can be traced down to beneath 1 or 2 tiles. We have never had to take up a complete floor.



- Step 1** - Plan where to install your heating mat.
- Step 2** - Cut the fabric backing and bend the heating mat to fit the room.
- Step 3** - Stick your mat to the prepared subfloor and apply a thin layer of adhesive over the mats. Always use flexible adhesive and grout.
- Step 4** - Apply the tile adhesive and tile. To allow the heating systems cannot be turned on for two weeks after installation of the floor tiles.

## Specifications

Code	Dimensions	Mat Size	Total Watts	Fitting Tape	Dual Lead	Single Lead
<b>Floor Warming Mats - 160 watts/m<sup>2</sup></b>						
UFHFW2	0.5x4.0	2m <sup>2</sup>	320	✓	✗	✓
UFHFW3	0.5x6.0	3m <sup>2</sup>	480	✓	✗	✓
UFHFW4	0.5x8.0	4m <sup>2</sup>	640	✓	✗	✓
UFHFW5	0.5x10.0	5m <sup>2</sup>	800	✓	✗	✓
UFHFW6	0.5x12.0	6m <sup>2</sup>	960	✓	✗	✓
UFHFW7	0.5x14.0	7m <sup>2</sup>	1120	✓	✗	✓
UFHFW8	0.5x16.0	8m <sup>2</sup>	1280	✓	✗	✓
UFHFW10	0.5x20.0	10m <sup>2</sup>	1600	✓	✗	✓
<b>Sole Source Heating - 200 watts/m<sup>2</sup></b>						
UFHS2	0.5x4.0	2m <sup>2</sup>	400	✗	✗	✓
UFHS3	0.5x6.0	3m <sup>2</sup>	600	✗	✗	✓
UFHS4	0.5x8.0	4m <sup>2</sup>	800	✗	✗	✓
UFHS5	0.5x10.0	5m <sup>2</sup>	1000	✗	✗	✓
UFHS6	0.5x12.0	6m <sup>2</sup>	1200	✗	✗	✓
UFHS7	0.5x14.0	7m <sup>2</sup>	1400	✗	✗	✓
UFHS8	0.5x16.0	8m <sup>2</sup>	1600	✗	✗	✓
<b>Bathroom Mats - 160 watts/m<sup>2</sup></b>						
UFHB0.9	0.3x3.0	0.9m <sup>2</sup>	144	✗	✓	✗
UFHB1.2	0.3x4.0	1.2m <sup>2</sup>	192	✗	✓	✗
UFHB1.8	0.3x6.0	1.8m <sup>2</sup>	288	✗	✓	✗
UFHB2.4	0.3x8.0	2.4m <sup>2</sup>	384	✗	✓	✗
UFHB3.6	0.3x12.0	3.6m <sup>2</sup>	576	✗	✓	✗
RCD13AMP	Residual current device 13amp - maximum 3.1kw					
RCD25AMP	Residual current device 25amp - maximum 6kw					
UFHTHERMOSTAT	Thermostat and timer (for floor warming or bathroom use)					
UFHTHERMOSOLE	Thermostat and timer (sole source)					

# Glossary

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**BTU's** - (British Thermal Units) the measurement used to calculate the required heat for a particular room to reach the recommended temperature. The heat source/s within a room must provide this amount of heat as a minimum.

**Guarantee** - 10 years for the mats provided installed correctly and not physically damaged 1 year for any electronic controls/switches etc

**IEE** - Institute of Electrical engineers

**Insulation** - a product which prevents heat loss, but which must be sufficiently rigid for tiling

**Programmable Thermostat** - reading the temperature of the air or the floor depending on the chosen system, the thermostat can be programmed to switch the system on and off by time and also by temperature.

**RCD** - residual current device - shuts off the supply when a fault is detected reducing the risk from electric shock

**Sole source heating** - it is not always possible to sufficiently warm all rooms at all times of the year with this type of heating. Various specifications of the room/s to be heated will be required to confirm the required BTU's and therefore if sufficient quantities of the mats can be installed to produce the heat required.

**Watts** - measurement of energy, 1000 watts is equivalent to 1kw.

## Ancillary Products

A full range of high quality fixing and sealing products, researched and developed to meet Fired Earth standards, are available for both professional and DIY use.

## Website - [www.firedearth.com](http://www.firedearth.com)

All our installation guides are available to download from our website.

## Useful Numbers

UK Sales	0845 366 0400
Export Sales	+44 (0)1295 814316
Installations	01295 814310
Technical	01295 814271
Home Deliveries	01295 814313

## Other Guides Available

Wall Tiling, Floor Tiling,  
Wood Flooring and Waterproofing  
Showers and Bathrooms.

## Disclaimer

The specifications and technical information given in this publication are intended for guidance and although they are to the best of our knowledge correct, they are given without warranty.

We cannot accept any responsibility for reliance placed upon the advice contained herein since practical expertise and site conditions are outside of our control. Neither do we accept liability for the performance of the product arising from such use. This does not affect your statutory rights.

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