

# A guide to Warmfloor Solutions



**WARMFLOOR**  
*solutions ltd*

WarmFloor Solutions is a specialist in the supply and design of electric under-floor heating, control and flooring insulation.

Established in 2001, we are located at Sunderland in the North East of England, this factory houses thousands of systems of every type and size to keep all areas covered.

WarmFloor Solutions can supply a total solution for any type of electric under floor heating application. Warmfloor Solutions supplies both single and twin conductor mat and cable systems in numerous sizes, complete with thermostatic control, floor insulation and support.

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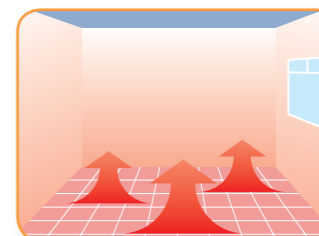
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### Underfloor Heating

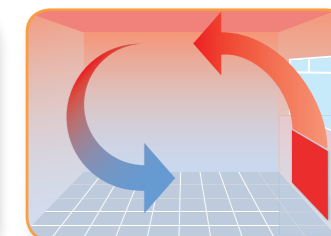
Underfloor Heating Systems are a perfect way to create warm comfort within Living areas such as Bathrooms, Kitchens, and Conservatories. This heating system is placed close to the floor surface and due to the even heat distribution upside you are getting the optimum heating climate in your room. Underfloor heating can be used both as a central heating unit and as a supplemental system. It is always our recommendation to partner our underfloor heating systems with insulation, this lowers heat up times significantly and further increases efficiency.

Electric Underfloor Heating systems nowadays are cheap, reliable, efficient and are a cost effective solution to keeping your family warm. Electric Underfloor Heating is fast becoming more and more popular in the modern home. Eliminating the need for wall mounted heaters which restrict the true size of your room and over all design. The installation of these underfloor heating systems and insulation have been made to provide the user with simplicity and peace of mind, there is literally a minimal thought process to the eventual layout of the system.

All of Warmfloor Solutions electric underfloor heating systems are manufactured with both single and twin core heating cables to suit individual customer needs.



Under-floor heating



Conventional heating

### Product Overview

Tiled floors make a wonderful addition to any home, attractive, hard wearing and hygienic. It is the flooring of choice for many kitchens, bathrooms and conservatories, with the added touch of warmth this transforms the elegant yet cold tile into something comfortable, pleasant and special...

### Mat System-Ultra Slim

The Warmfloor Mat System range is ultra thin (3mm approx) and is designed to enable installation within a minimal thickness dimension.

All Mat Systems are 500mm wide and available in a variety of lengths, ranging from 100 Watts/m<sup>2</sup> to 200 Watts/m<sup>2</sup>. Warmfloor Solutions mat systems can be used as a comfort or primary heat source.

All Mat systems are ready to use and easy to install, simply roll the mat out from your desired starting point, cut the mesh, turn it back on itself and repeat until the floor is covered end to end.

The system can cover an area of virtually any shape and size, to provide simple floor warming or a primary heat source.

### EcoMat 150

- Providing 150 Watts/m<sup>2</sup>
- Single core cable
- Aluminium Jacket
- The most inexpensive mat system on the market place!

### TwinMat 100

- Providing 100 Watts/m<sup>2</sup>
- Twin core cable
- Aluminium Jacket
- Professional Matt system

### TwinMat 150

- Providing 150 Watts/m<sup>2</sup>
- Twin core cable
- Aluminium Jacket
- Professional Matt system

### TwinMat 200

- Providing 200 Watts/m<sup>2</sup>
- Twin core cable
- Aluminium Jacket
- Professional Matt system
- Specifically designed for conservatories



### Loose Cable Twin

An ideal solution for small complex areas to compliment both tile and wooden floor finishes. Loose cable Twin is ultra thin and is suitable for all new builds and refurbishment projects...

The ultra thin double core heating cable type GB consists of:

- Spooled heating cable
- Full instructions
- Technical certificate
- Providing 80 – 200 Watts/m<sup>2</sup>
- Twin Core cable

### In-Slab Cable

A primary heat source cable which is ideal for new builds, extensions, room conversions etc. Once laid within a screed, a variety of finished surfaces such as tiles, laminates etc, can be used.



### Planning

Show your room shape, size and type, complete with fixtures if any



### Installation

Each of our underfloor heating systems have been designed for optimum use in various situations. Check the table below to see which system is best suited to your situation, otherwise just give us a ring on Tel: 0845 060 3377 and we will advise you.

#### Sub Floor

Concrete  
Wood  
Chipboard

#### Over Floor

Ceramic Tiles  
Natural Stone  
Laminates  
Wood  
Carpet

#### Product Options

EcoMat 150  
TwinMat 150  
Twin Loose Cable

### Conservatory Installations

#### Sub Floor

Concrete base  
in Conservatory  
Wood base  
in Conservatory

#### Over Floor

Ceramic Tiles  
Natural Stone  
Laminates  
Wood  
Carpet

#### Product Options

TwinMat 200  
In Slab Cable 200  
Twin Loose Cable

### Laying out mat and cables

Plan the position of your thermostat, this is the starting point of where the under floor heating system is to be laid. This should be in a suitable and convenient location for use and within easy access of an appropriate electrical supply. Using a drawing of the intended room, sketch a layout from start to finish, ensuring that the heating system covers the maximum floor area possible (avoid pipes, toilets, baths, permanent fixtures etc.) It is important to check the mat or cable will fit the area to be heated, as all heating systems can not be cut.

### Siting of the controller

Choose the location carefully avoiding radiant heat appliances, concealed pipes, chimneys, sun shine spots etc.

Ensure the sitting of your controller is within easy access of an electrical supply and that your installation is carried out by a qualified electrician.

Detailed instructions contained within our kits.

## Mat Systems

- Read the instructions contained within the kit
- Follow the plan, site the thermostat and layout the mat as required
- Mark where to cut a channel and insert the floor sensor into conduit provided
- Fill the groove with cement
- Clean floor thoroughly
- Evenly lay your mat system
- Check the heater works before the application of the levelling compound
- Lay suitable levelling compound prior to fixing covering (e.g Tiles etc.)
- Allow floors to dry completely before energising
- Test the installation finally

All Testing of products should be carried out in line with product instructions found in each kit.

## Twin Loose Cable and In Slab Cable

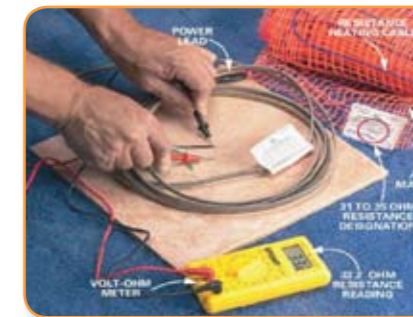
- Read the instructions contained within the kit
- Follow the plan, site the thermostat
- Next, determine the cable spacing using the following formula

$$\frac{\text{Floor area(m}^2\text{) x 1000}}{\text{Cable length (m)}} = \text{Cable spacing (mm)}$$

- Mark out heater pitch to ensure a uniform heat across the surface
- Mark where to cut a channel and insert the floor sensor into conduit provided
- Fill the groove with cement
- Clean floor thoroughly
- Check the heater works before the application of the levelling compound
- Lay suitable levelling compound prior to fixing covering (e.g Tiles etc.)
- Allow floors to dry completely before energising
- Test the installation finally

## Product Testing

When installing your under floor heating system, it is vital to ensure everything is working as it should. These tests should be performed by a competent person. The tests include a continuity of the heater, plus an insulation resistance test. These two tests should be performed before the heater is laid. When the heater is completely laid on the floor and on completion of the tiling or flooring.



## TwinMat 100

### Ultra-thin floor heating system



The TwinMat 100 is ideally suited to timber floors or concrete flooring. The TwinMat 100 combined with one of our leading I-Warm Thermostats will transform your home with warmth and comfort giving it that special touch...

### The Perfect Solution

- TwinMat is the ideal solution for floor heating requirements in the following circumstances:
- Rooms with low ceilings
- Rooms having a small surface area
- Where you wish to install underfloor heating to an existing floor
- Where the installation needs to be quick and simple

### Simple and Reliable...

## TwinMat 100 Ultra-Thin Floor Heating System

TwinMat 100 is designed and manufactured to enable a complete heated floor to be installed, within a minimal thickness dimension. The ultra-thin heat mat (3mm) may be embedded within the tile fixing cement. TwinMat 100 complies with the recent introduction of new regulations "16th Edition I.E.E. Regulation 601-09-04"

### Ease of Installation The Perfect Solution

TwinMat 100 heaters are "ready-to-use" products which makes the installation a very simply process. The mesh on the mats may be cut by the installer to match exact floor coverage requirements, and are simply positioned on the floor in your room prior to the application of any compounds. TwinMat 100 is manufactured with a single "cold tail", allowing complete ease of installation. Warmfloor Solutions Ltd promote energy efficiency and would highly recommend the use of an insulation prior to the laying of any heating elements.

Warmfloor Solutions Ltd provide full and comprehensive technical support for all their product lines. For further assistance please call us on 0845 060 3377

## How to select your TwinMat system

From the table below, select the TwinMat that is nearest to the available free area, excluding floor obstructions such as kitchen units, bath, WC

TwinMat 100	Heated Floor Area	Watts @
	@ 100 watts/m <sup>2</sup>	230 Vac
MHH50-0.5	0.5m <sup>2</sup>	50
MHH100-1.0	1.0m <sup>2</sup>	100
MHH150-1.5	1.5m <sup>2</sup>	150
MHH200-2.0	2.0m <sup>2</sup>	200
MHH250-2.5	2.5m <sup>2</sup>	250
MHH300-3.0	3.0m <sup>2</sup>	300
MHH350-3.5	3.5m <sup>2</sup>	350
MHH400-4.0	4.0m <sup>2</sup>	400
MHH500-5.0	5.0m <sup>2</sup>	500
MHH600-6.0	6.0m <sup>2</sup>	600
MHH700-7.0	7.0m <sup>2</sup>	700
MHH800-8.0	8.0m <sup>2</sup>	800
MHH900-9.0	9.0m <sup>2</sup>	900
MHH1000-10.0	10.0m <sup>2</sup>	1000
MHH1200-12.0	12.0m <sup>2</sup>	1200

## How to select & install the TwinMat 100 system

1. The free floor area where heating is required should be measured to determine mat size needed.
2. Select the required mat or combination of mats to cover floor area from the table.
3. Where possible lay suitable insulation boards across complete floor area to prevent downward heat loss.
4. Select position for the thermostat and channel out groove in the wall for the thermostat and in the floor for the floor sensor and conduit. Please note the maximum switching capacity for the thermostat is 16 amps (3600 watts).
5. Before laying the self adhesive mat ensure floor area is clean and free of dust or dirt.
6. Upon reaching the end of the mat run simply cut the mesh, turn the mat and lay the next piece beside the first. The heating cable must NOT be cut.
7. If required the mat can be held in place with aluminium fixing tape or similar.
8. With the mat in place the floor is ready to be covered with a suitable flexible adhesive or levelling compound depending upon the final floor covering.
9. All electrical connections should be suitably protected with the use of RCCD/MCB breakers and installed by a competent person.

## TwinMat 150

### Ultra-thin floor heating system



Tiled floors make a wonderful addition to any home, attractive, hard wearing and hygienic. It's the flooring of choice for many kitchens, bathrooms and conservatories, with the added touch of warmth, this transforms the elegant yet cold tile into a comfortable, pleasant and cosy experience...

### The Perfect Solution

- TwinMat is the ideal solution for floor heating requirements in the following circumstances:
- Rooms with low ceilings
- Rooms having a small surface area
- Where you wish to install underfloor heating to an existing floor
- Where the installation needs to be quick and simple

### Simple and Reliable...

## TwinMat 150 Ultra-Thin Floor Heating System

TwinMat 150 is designed and manufactured to enable a complete heated floor to be installed within a minimal thickness dimension. The ultra-thin heat mat (3mm) may be embedded within the tile fixing cement. TwinMat 150 complies with the recent introduction of new regulations "16th Edition I.E.E. Regulation 601-09-04"

### Ease of Installation The Perfect Solution

TwinMat 150 heaters are "ready-to-use" products, which makes the installation a very simply process. The mesh on the mats may be cut by the installer to match exact floor coverage requirements, and are simply positioned on the floor in your room prior to the application of any compounds. TwinMat 150 is manufactured with a single "cold tail" allowing complete ease of installation. Warmfloor Solutions Ltd promote energy efficiency and would highly recommend the use of an insulation prior to the laying of any heating elements.

Warmfloor Solutions Ltd provide full and comprehensive technical support for all their product lines.

For further assistance please call us on 0845 060 3377

## How to select your TwinMat system

From the table below, select the TwinMat that is nearest to the available free area, excluding floor obstructions such as kitchen units, bath, WC

TwinMat 150	Heated Floor Area	Watts @
	@ 150 watts/m <sup>2</sup>	230 Vac
MHH140-1.0	1.0m <sup>2</sup>	140
MHH185-1.3	1.3m <sup>2</sup>	185
MHH235-1.5	1.5m <sup>2</sup>	235
MHH310-2.0	2.0m <sup>2</sup>	310
MHH410-2.5	2.5m <sup>2</sup>	410
MHH520-3.0	3.0m <sup>2</sup>	520
MHH580-3.5	3.5m <sup>2</sup>	580
MHH690-4.5	4.5m <sup>2</sup>	690
MHH840-5.5	5.5m <sup>2</sup>	840
MHH980-6.5	6.5m <sup>2</sup>	980
MHH1100-7.5	7.5m <sup>2</sup>	1100
MHH1290-8.5	8.5m <sup>2</sup>	1290
MHH1590-10.5	10.5m <sup>2</sup>	1590
MHH1800-12.0	12.0m <sup>2</sup>	1800
MHH2070-13.5	13.5m <sup>2</sup>	2070

## How to select & install the TwinMat 150 system

1. The free floor area where heating is required should be measured to determine mat size needed.
2. Select the required mat or combination of mats to cover floor area from the table.
3. Where possible lay suitable insulation boards across complete floor area to prevent downward heat loss.
4. Select position for the thermostat and channel out groove in the wall for the thermostat and in the floor for the floor sensor and conduit. Please note the maximum switching capacity for the thermostat is 16 amps (3600 watts).
5. Before laying the self adhesive mat ensure floor area is clean and free of dust or dirt.
6. Upon reaching the end of the mat run simply cut the mesh, turn the mat and lay the next piece beside the first. The heating cable must NOT be cut.
7. If required the mat can be held in place with aluminium fixing tape or similar.
8. With the mat in place the floor is ready to be covered with a suitable flexible adhesive or levelling compound depending upon the final floor covering.
9. All electrical connections should be suitably protected with the use of RCCD/MCB breakers and installed by a competent person.

## TwinMat 200

### Ultra-thin floor heating system



The ideal solution for tiled surfaces, specifically designed for use within a conservatory where a tiled floor finish is preferred. TwinMat 200 is a high output system to provide optimum results...

### TwinMat 200 Heating System

TwinMat 200 is designed and manufactured to enable a complete heated floor to be installed, within a minimal thickness dimension. The ultra-thin heat mat (3 mm approx.) may be embedded within the tile fixing cement. TwinMat 200 is rated at 200 watts/m<sup>2</sup> to ensure maximum comfort.

TwinMat 200 complies with the recent introduction of new regulations "16th Edition I.E.E. Regulation 601-09-04"

### Floor Insulation...

To achieve both energy efficiency and comfort levels the floor must be insulated. Warmfloor Solutions recommend a minimum of a 10 mm insulation board directly beneath the heater ensuring maximum performance.

### Ease of Installation

TwinMat 200 heaters are "ready-to-use" products, which makes the installation a very simple process. The mats, which may be cut by the installer to match exact floor coverage requirements, are simply positioned on the floor in your room prior to the application of tile fixing cement, after which, your tiles may be laid using traditional methods. Virtually any shape or area can be heated using the TwinMat 200 system.

### Benefits

- Conservatory / Sun room can become an all year round living space.
- Bitterly cold tiles in winter become warm and inviting
- Twin core cable offers quick and easy installation

### Simple and Reliable...

### How to select your TwinMat system

From the table below, select the nearest size of mat or multiple mats to match the floor area.

TwinMat 200	Floor Area Coverage @ 200 watts/m <sup>2</sup>	Watts @ 230vac
MHH1175-6.0	6.0m <sup>2</sup>	1175
MHH1400-7.0	7.0m <sup>2</sup>	1400
MHH1660-8.0	8.0m <sup>2</sup>	1660
MHH1850-9.0	9.0m <sup>2</sup>	1850
MHH2225-11.0	11.0m <sup>2</sup>	2225

### How to select & install the TwinMat 200 system

1. The free floor area where heating is required should be measured to determine mat size needed.
2. Select the required TwinMat or combination of mats to cover floor area from the table.
3. Channel out a groove in the wall for the thermostat. The floor sensor is placed in the conduit provided within the floor construction.
4. Before laying the self adhesive mat ensure floor area is clean and free of dust or dirt.
5. Warmfloor Solutions recommend the laying of an insulation (10mm minimum) beneath the heater to prevent down-ward heat loss.

6. Upon reaching the end of the mat run, simply cut the mesh, turn the mat and lay the next piece beside the first. The heating cable must NOT be cut.
7. If required the mat can be held in place with aluminium fixing tape or similar. With the mat in place the floor is ready to be tiled.
8. TwinMat 200 can either be covered by one layer of tile adhesive or a self levelling compound.
9. For tiled surfaces the TwinMat can be covered in one layer of flexible tile adhesive.
10. For other floor coverings such as laminate, solid wood floors etc., the TwinMat should be covered with a suitable levelling compound.
11. DO NOT turn the TwinMat heating system on until the tiles have been allowed to set.
  - Please note that the Controller has a switching limit of 3600 watts, therefore areas requiring multiple mats will need a contactor supplied and fitted by a qualified person if the total heating load exceeds the switch capacity of the controller.
    - We recommend the use of RCCD/MCB protection with all the underfloor heating systems.

## EcoMat 150

### Ultra-thin floor heating system



Tiled floors make a wonderful addition to any home, attractive, hard wearing and hygienic. It's the flooring of choice for many kitchens, bathrooms and conservatories, with the added touch of warmth this transforms the elegant yet cold tile into a comfortable, pleasant and cosy experience...

### The Perfect Solution

- EcoMat 150 is the ideal solution for floor heating requirements in the following circumstances:
- Rooms with low ceilings
- Rooms having a small surface area
- Where you wish to install underfloor heating to an existing floor
- Where the installation needs to be quick and simple

### Simple and Reliable...

### EcoMat 150 Ultra-Thin Floor Heating System

EcoMat 150 is designed and manufactured to enable a complete heated floor to be installed within a minimal thickness dimension. The ultra-thin heat mat (3mm) may be embedded within the tile fixing cement. EcoMat 150 complies with the recent introduction of new regulations "16th Edition I.E.E. Regulation 601-09-04"

### Ease of Installation The Perfect Solution

EcoMat 150 heaters are "ready-to-use" products, which makes the installation a very simply process. The mesh on the mats may be cut by the installer to match exact floor coverage requirements, and are simply positioned on the floor in your room prior to the application of any compounds. Warmfloor Solutions Ltd promote energy efficiency and would highly recommend the use of an insulation prior to the laying of any heating elements.

Warmfloor Solutions Ltd provide full and comprehensive technical support for all their product lines.  
For further assistance please call us on 0845 060 3377

### How to select your EcoMat 150 system

From the table below, select the EcoMat 150 that is nearest to the available free area, excluding floor obstructions such as kitchen units, bath, WC

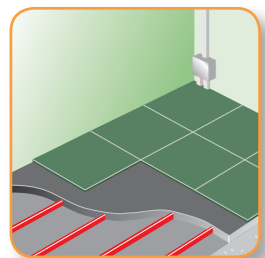
EcoMat 150	Heated Floor Area	Watts @
	@ 150 watts/m <sup>2</sup>	230 Vac
MN170-1.15	1.15m <sup>2</sup>	170
MN225-1.5	1.5m <sup>2</sup>	225
MN275-2.0	2.0m <sup>2</sup>	275
MN370-2.6	2.6m <sup>2</sup>	370
MN480-3.3	3.3m <sup>2</sup>	480
MN590-4.0	4.0m <sup>2</sup>	590
MN680-4.6	4.6m <sup>2</sup>	680
MN820-5.5	5.5m <sup>2</sup>	820
MN1000-6.9	6.9m <sup>2</sup>	1000
MN1170-8.0	8.0m <sup>2</sup>	1170
MN1320-9.0	9.0m <sup>2</sup>	1320
MN1550-10.5	10.5m <sup>2</sup>	1550
MN1900-12.8	12.8m <sup>2</sup>	1900
MN2140-14.3	14.3m <sup>2</sup>	2140
MN2500-17.0	17.0m <sup>2</sup>	2500

### How to select & install the EcoMat 150 system

1. The free floor area where heating is required should be measured to determine mat size needed.
2. Select the required mat or combination of mats to cover floor area from the table.
3. Where possible lay suitable insulation boards across complete floor area to prevent downward heat loss.
4. Select position for the thermostat and channel out groove in the wall for the thermostat and in the floor for the floor sensor and conduit. Please note the maximum switching capacity for the thermostat is 16 amps (3600 watts).
5. Before laying the self adhesive mat ensure floor area is clean and free of dust or dirt.
6. Upon reaching the end of the mat run simply cut the mesh, turn the mat and lay the next piece beside the first. The heating cable must NOT be cut.
7. If required the mat can be held in place with aluminium fixing tape or similar.
8. With the mat in place the floor is ready to be covered with a suitable flexible adhesive or levelling compound depending upon the final floor covering.
9. All electrical connections should be suitably protected with the use of RCCD/MCB breakers and installed by a competent person.

## Loose Cable Twin

### Loose Cable floor heating system



An ideal solution for small complex areas to compliment both tile and wooden floor finishes. Loose Cable Twin is ultra thin and is suitable for all refurbishment projects....

### Floorwarming Made Easy

The ultra thin double core heating cable type GB consists of: Spooled Heating cable, Full instructions & Technical Certificate

Due to the range of different combination of spooled heating cable kits, you can install the underfloor heating system in premises of any size and shape. The spooled heating cable kit is the perfect solution for premises of irregular shape where you have to consider furniture, sanitary equipment, etc. in the process of the underfloor heating system installation. It is easily installed from a convenient plastic reel, either the heating cable is laid directly under tile into adhesive layer or it can be installed into screed if a heat-storage system is required

### Benefits from under-floor heating include:

- No more cold feet! More comfortable warmth
- Uniform heat, where it is needed, distributed across the whole floor
- Lower temperature set point = great energy efficiency
- Invisible heat – no unsightly radiators
- No high temperature surfaces – safer, particularly for older people
- Gentle air circulation reduces airborne dust
- Dry floors eliminate fungi growth
- Easier to keep clean



### How to select your Loose Cable Twin system

From the table below, select the Loose Cable Twin system that is nearest to the available free area, excluding floor obstructions such as kitchen units, bath, WC

Loose Cable Twin System	Cable Length (Metres)	Watts @ 230 VAC	Heated Area 150-120 watts/m <sup>2</sup>
GB160	14	160	1-1.3m <sup>2</sup>
GB220	18	220	1.4-1.8m <sup>2</sup>
GB310	24	310	1.9-2.5m <sup>2</sup>
GB410	32	410	2.6-3.4m <sup>2</sup>
GB550	40	550	3.5-4.5m <sup>2</sup>
GB690	53	690	4.6-5.7m <sup>2</sup>
GB840	65	840	5.8-7m <sup>2</sup>
GB980	75	980	7.1-8.1m <sup>2</sup>
GB1100	85	1100	8.2-9.1m <sup>2</sup>
GB1290	99	1290	9.2-10.7m <sup>2</sup>
GB1590	122	1590	10.8-13.2m <sup>2</sup>
GB1800	138	1800	13.3-15m <sup>2</sup>
GB2070	159	2070	15.1-17.2m <sup>2</sup>

### How to select & install the Loose Cable Twin system

1. Measure the area required to be heated allowing for obstructions such as kitchen units, Bath, WC.
2. Select the watts/m<sup>2</sup> required (generally 150-120 watts provide a comfort heat).
3. Where possible lay suitable insulation boards across complete floor area to prevent down-ward heat loss.
4. Ensure floor area is clear and free of debris.
5. Mark heater pitch out on floor with marker pen or similar
6. Select appropriate position for the controller. (Note controller has a switching limit of 16 amps (3600 watts) and therefore areas requiring multiple heaters can be switched via a suitably rated contactor).
7. Lay cable and loop back and forth at marked out pitch. Note heater must not be cut.
8. Cover heater cable with suitable adhesive or self levelling compound (average 8mm thickness).
9. We recommend the use of RCCD/MCB protection with all underfloor heating systems. Please note all electrical connections should be carried out by a suitably competent person.

## P-Rock Floor Insulation



P-Rock floor insulation is the perfect way to insulate any room when laying underfloor heating.

The ultra high density board has been developed specifically for use with electrical under floor heating cable, mats and carbon film heaters

- Ultra lightweight and ultra strong
- Water and moisture proof
- Easy to handle - simple to fit
- Heater laid directly on to board

### Fixing... Tiled floor finish

### Existing concrete floors

Must be clean, dry and level and free of any contamination. New concrete or screed bases should be adequately cured and dried to allow shrinkage to occur prior to fixing the P-Rock insulation board.

The insulation board should be laid with staggering joints on freshly ribbed adhesive and thoroughly bedded in, to ensure that there is a solid support with no air voids beneath. All joints should be taped with the adhesive tape provided to a seamless floor insulation system.

The flexible adhesive must be allowed to harden prior to laying the heaters and applying the final floor finish.

### Timber floors

The existing timber floor boards should be securely and rigidly fixed (refer to BS 5268 : part2 : 1991 regarding minimum stiffness and rigidity).

The insulation board should be laid with staggering joints on freshly ribbed adhesive and thoroughly bedded in to ensure that there is a solid support with no air voids beneath. All joints should be taped with the adhesive tape provided to a seamless floor insulation system.

The boards should be supplementary fixed with screws and washers. The fixing rate should be 5 per square board.

### Ultra High Density Floor Insulation...

All boards are 600mm x 600mm and available in 6, 10, 20, 30, 40, 50, 60 mm thicknesses

### Tolerances

In accordance with BS EN 13163 tolerances on the cut dimensions are defined as follows:

Length = L1                    ± 3mm or ± 0.6% whichever is greater  
Width = W1                    ± 3mm or ± 0.6% whichever is greater  
Thickness = T1                ± 2mm  
Squareness = S1              ± 5mm per 1000mm

Alternative tolerances can be provided for specific applications.

### Dimensional stability

In accordance with BS EN 13163 = DS(N)5  
± 0.5% under constant laboratory conditions.

### Density

The density is 30kg/m<sup>3</sup>.

### Typical properties of Red-Rock 300 Floor Insulation

Mechanical properties

Compressive strength @ 10% compression (kPa)	300
Compressive strength @ 1% nominal strain (kPa)	120

### Moisture properties

Water vapour permeability mg/ (Pa.h.m)	0.007-0.018
Vapour resistivity (MNs/g)	238

### Thermal properties

Thermal conductivity (W/mK, at 10°C)	0.033
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## I-Warm - Thermostats

I-Warm 720 / I-Warm 730 / Roomstat 110



### I-WARM 720

The I-WARM 720 is a programmable thermostat with remote floor temperature sensor. It allows decreasing significantly the energy consumption of the warm floor by maintaining the comfort temperature only in the preset time intervals when it is really required by the customer.

Large-screen backlit graphical display with 3 control buttons. A user-friendly and easy operator guidance. Displaying the current floor temperature, the set temperature and the ON/OFF heater condition. The built-in menu allows to control all the functions of the device.

Also available in silver and charcoal

Multi Task thermostat, with built-in real-time clock and calendar. The device stores and keeps all the information about the heating system that allows the customer to control his expenditures not to the expense of comfort. The intelligent software allows determining parameters of the heat processes in the premises. The user can set time intervals when he needs the heating and the device makes the rest by itself.

### Specifications

Temperature Control Range:	+5°C to +45°C
Maximum Current Load:	16 Amps
Supply Voltage:	230 VAC 50, 60Hz
Weight:	150 grams
Dimensions:	80mm x 80mm x 52mm
Sensor Connection Cable:	Upto 25 Metres (floor only)
Frame colour:	Black, white, gold, silver.

### Accessories

TYPE	Product Details
OB-2ms	2 Metre Floor Sensor
OB-BB	Surface Mounted Back Box - White

### I-WARM 730

The I-WARM 730 with 2 remote floor temperature sensors allows to control two independent zones



### The specific features of the I-WARM 730 are:

Large-screen backlit graphical display with 3 control buttons. An user-friendly and easy operator guidance. Displaying the current floor temperature, the set temperature and the ON/OFF heater condition. Self-diagnostics of

the heating system with warning caption output Service mode for manual heating control without using any sensors; the user sets the percentage (10 to 90%) of the time when the heating is ON during each hour. It ensures energy saving up to 70%.

### Specifications

Temperature Control Range:	+5°C to +45°C
Maximum Current Load:	16 Amps
Supply Voltage:	230 VAC 50Hz
Weight:	200 grams
Dimensions:	116mm x 82mm x 54mm
Sensor Connection Cable:	Upto 25 Metres (floor only)
Frame colour:	Black, white, gold, silver.



### Roomstat 110

This thermostat can be considered as the classical solution for your temperature regulation. The thermostat is equipped with an indication LED of the heating system state and a temperature adjustment knob. The thermostat is an energy saving device, it automatically turns the heating system on and off reacting

upon the temperature sensor signals. That allows to consume precisely enough electric energy as it is necessary to maintain the preset temperature in the premises.

### Specifications

Temperature Control Range:	+5°C to +45°C
Maximum Current Load:	16 Amps
Supply Voltage:	187-242 VAC 50Hz
Weight:	150 grams
Dimensions:	116mm x 82mm x 54mm
Sensor Connection Cable:	Upto 25 Metres (floor only)
Frame colour:	Black, white, gold, silver.



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