Sunstone *RapidFit*

Loose Wire System

Installation Manual

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SunStone
electric underfloor heating

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Please ensure that you have the correct heating cable(s) for the area you wish to heat. Sunstone, accepts no liability, expressed or implied, for any loss or consequential damage suffered as a result of installations which in any way contravene the instructions that follow. Ensure all electrical connections conform to the current BS 7671 National Wiring Regulations. Final connections to the main electricity supply MUST be completed by a Part P qualified and competent electrician.

It is important that before, during and after installation that all requirements are met and understood. If the instructions are followed, you should have no problems. If you require help at any stage, please contact our helpline.

Perform a site inspection. You will need to confirm that all measurements and other requirements on site match your working drawings.

Inspect the site for possible hazards that could damage the heating cable, such as nails, staples, materials or tools. Ensure that during the course of the installation no damage is caused to the heating cable by falling or sharp objects.

Ensure all electrical connections conform to the current BS 7671 National Wiring Regulations. Final connections to the main electricity supply MUST be completed by a Part P qualified and competent electrician.

Ensure the system is protected by a dedicated 30 mA RCD/RCBO or an existing RCD/RCBO). Time delay RCD's must not be used.

The heater's packaging includes a warning label that must be affixed to the consumer unit, directly beneath the electric underfloor heating circuit breaker.

Ensure the Control card, EcoDesign compliance card at the back of the manual, layout plan, and all electrical test records are completed and affixed to the consumer unit, following the current BS 7671 standards.

The subfloor must be pre-insulated unless it is an intermediate floor. Ensure the subfloor is prepared to an SR1 Surface Regularity. The subfloor must be smooth, dry, frost-free, solid, suitably weight-bearing and dimensionally stable.

Ensure timber subfloors are prepared in accordance with national standards and manufacturer instructions are properly followed to avoid subfloor movement to prevent any damage to the system.

Install the floor sensor centrally between the two closest parallel runs of heating cable and away from other heat sources such as hot water pipes, lighting fixtures, chimneys etc. Do not cross the sensor over the heating element.

Before installing the floor finish, its suitability for use with underfloor heating and its maximum operating temperature should be checked against required operating conditions. Ensure the heat output of the floor meets your requirements.

Install floor coverings which are at least 5 mm thick. For floor coverings other than tile, lay a minimum 10 mm levelling compound over the heater first. Check with flooring manufacturer for suitability with floor heating.

Ensure adhesives, grouts, levelling compound used is compatible with underfloor heating and suitable for application onto electric underfloor heating systems.

Consideration should be given to the thermal resistance and temperature limits of the chosen floor covering and its impact on the system heat output.

Ensure all furniture installed over underfloor heating has feet, creating a minimum 50 mm ventilated space beneath it to allow heat flow into the room.

This heater incorporates an earth connection for functional purposes only.

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 shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

The coldtail can be cut / extended where required. This heating cable has a type Y coldtail attachment, therefore if the coldtail is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

DO NOT cut, shorten or extend the heating cable, it must be fully installed within the layer of tile adhesive or levelling compound. The heating cable must not be installed over another cable run, over coldtails or the floor sensor.

Levelling compounds used must be suitable for single pour installation depths of at least 10 mm.

Heating cables must not cross expansion joints of the building or structure.

DO NOT leave surplus heating cable rolled up under units or fixtures, use the correct size system for your installation.

DO NOT attempt a DIY repair if you damage the heating cable, contact us for assistance.

DO NOT tape over manufactured joints or the floor sensor tip. Doing so will cause air pockets and damage the heating cable and sensor. The manufactured joints and heater must be covered with a full bed of flexible adhesive directly beneath the heated floor.

DO NOT install items above the heating system which have a combined resistance of more than 0.15 m^2K/W. Such items include bean bags, heavy rugs, flat furniture, animal beds or mattresses.

DO NOT bend the heating cable under 25 mm radius.

DO NOT switch on the heater until the tile adhesive and grout has fully cured. DO NOT use the heating cable to accelerate the drying process of the adhesive or levelling compound.

DO NOT install the heating cable in ambient temperatures less than -10 °C.

DO NOT install the system on irregular surfaces such as on stairs or up walls.

DO NOT use staples to secure the heating cable to the subfloor.

DO NOT install the heating cable in locations where they will increase the ambient temperature of any existing electrical installation above its rated value.

Symbols used in manual

WARNING! Radiant direct floor heating system.
Risk of shock or fire
Failure to comply with local wiring regulations or the contents of this manual may result in electric shock or fire!

Installation in concrete or similar material

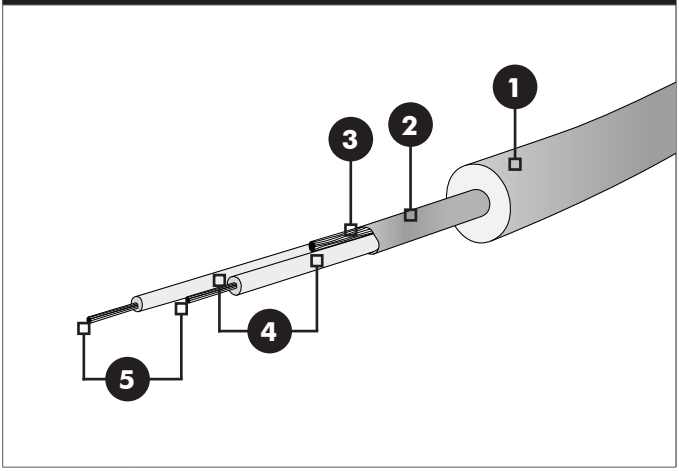
Important information

Electrical information

Specifically designed to be used under stone and ceramic tiles, Sunstone ***RapidFit*** Loose Wire System sits within the layer of flexible tile adhesive below the tile or stone floor finish. Alternatively, the system can be installed within a minimum 10mm layer of self-levelling compound.

The heat output of the system can vary depending on your needs. Standard 80mm spacing between cable runs will provide 150W/m² however can be adjusted to suit your requirements, see Step 4 - Layout Planning.

Cable Section



1	PVC outer insulation
2	Aluminium mylar tape
3	Copper drain wire
4	ETFE inner insulation
5	Dual core, multi-strand heating element

Step 1 - Electrical supply

The supply to the thermostat MUST be protected by a 30mA RCD or RCBO at all times. Time delay RCD's or RCBO's must not be used. No more than 7.5 kW of heating should be connected to each 30 milliamp RCD or RCBO. For larger loads, use multiple RCD's or RCBO's.

The cable(s) must be separated from the power supply by suitably rated circuit breaker that disconnects all poles with at least 3 mm contact separation. Use MCB's, RCBO's or fuses for this purpose.

Final connections to the main electricity supply MUST be completed by a qualified electrician.

The heater's packaging includes a warning label that must be affixed to the consumer unit, directly beneath the electric underfloor heating circuit breaker.

If taking the power supply to the heaters from an existing 30 mA RCD/RCBO protected circuit, it should be calculated whether or not the circuit can handle the additional load and if necessary the supply must be de-rated to ≤ 16 amps.

A junction box is required if more than two heaters are being connected to a single thermostat.

When conducting an insulation resistance test on the supply to the thermostat the thermostat and heaters must be isolated or disconnected.

The floor sensor must be installed (300 mm) centrally between two closest parallel runs of heating cable and away from other heat sources such as hot water pipes, lighting fixtures etc.

Manufactured joints must be recessed into subfloor so as they sit at the same height as the heater.

Zoning information

In the case of bathroom installations, electrical regulations prohibit the installation of mains voltage products such as thermostats, contactors, fused spurs, isolators or junction boxes, within Zones 0 or 1.

Any mains voltage product fitted within Zone 2 must have a degree of protection at least of IPX4 or IPX5 if water jets are present.

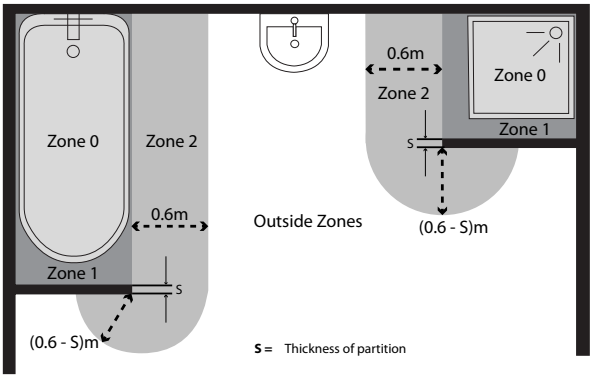
It is common to install the thermostat outside of wet rooms in the adjacent connected room in circumstances where it is not practical to install the thermostat within the wet room.

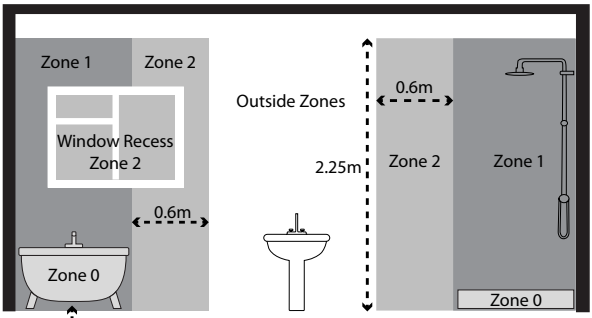
When installed in this way, using only the sensor to control the heating, it is not possible to directly control the air temperature, only the surface temperature.

All electrical connections must conform to the current BS 7671 National Wiring Regulations. Final connections to the main electricity supply MUST be completed by a Part P qualified and competent electrician.

Zone dimensions

Location containing a bath, shower with tray and partition

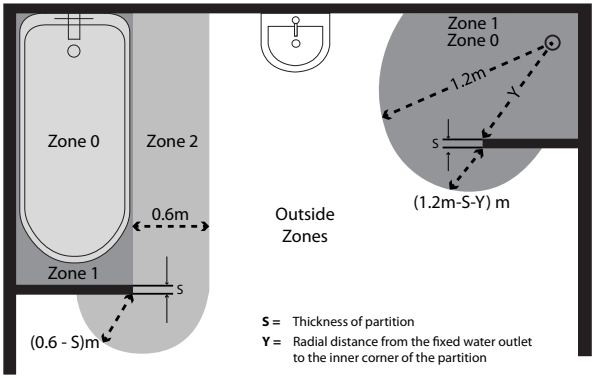


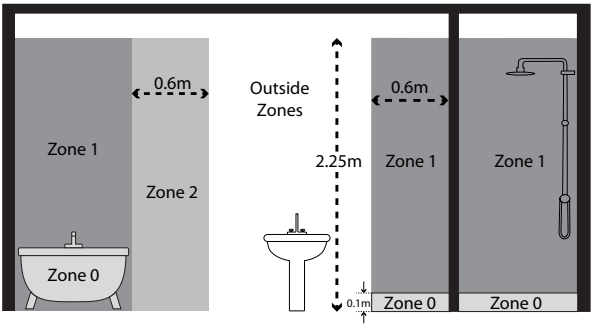


Location under bath is Zone 1 if accessible without the use of a tool, otherwise considered out of zones

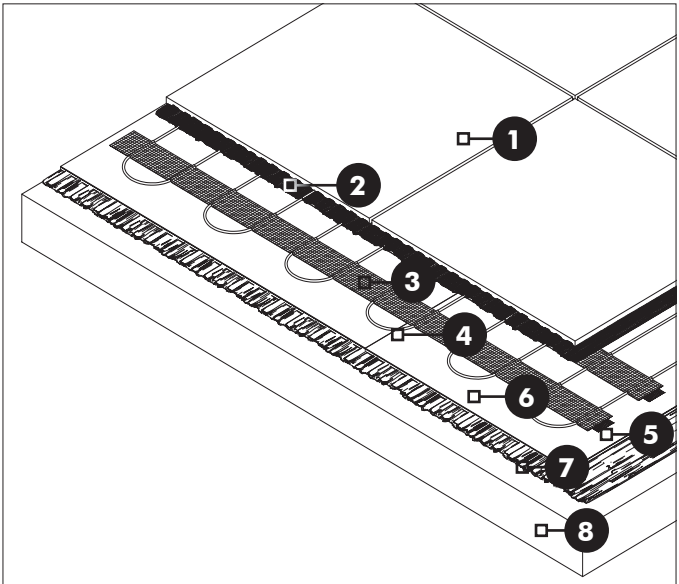
Zone dimensions

Location containing a bath, shower **without** tray and partition



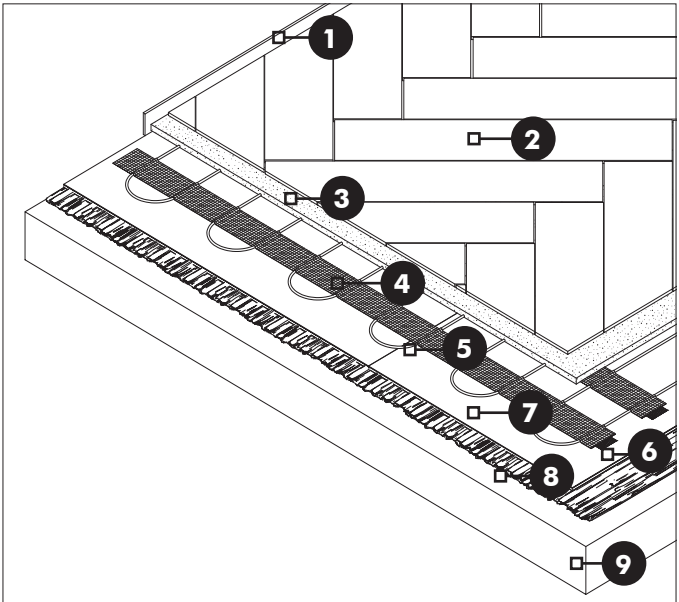


Recommended subfloor - Tile floor finishes



1	Tile Floor finish
2	Flexible tile adhesive
3	Fibreglass tape
4	Heating cable *DO NOT cut at any stage!*
5	Double-sided tape *To secure the heating cable in place*
6	Insulation boards (Optional) *Adding Insulation boards below can help improve the response time of the system, particularly when installing over screed or concrete*
7	Flexible tile adhesive (Optional) Required if installing Insulation Boards
8	Pre-insulated subfloor with a surface regularity of SR1

Recommended subfloor - All floor finishes



1	Perimeter expansion strip *Required if self-levelling to allow for differential movement between finished floor level and walls.*
2	Floor finish
3	10 mm levelling compound *Levelling compound used must be compatible with electric underfloor heating. The levelling compound must be applied as a single layer.*
4	Fibreglass tape
5	Heating cable *DO NOT cut at any stage!*
6	Double-sided tape *To secure the heating cable in place*
7	Insulation boards (Optional) *Adding Insulation boards below can help improve the response time of the system, particularly when installing over screed or concrete*
8	Flexible tile adhesive (Optional) Required if installing Insulation Boards
9	Pre-insulated subfloor with a surface regularity of SR1

Step 2 - Subfloor considerations

To prevent excessive heat loss through the floor, Sunstone ***RapidFit*** Loose Wire System should only be laid over insulated or intermediate subfloors.

The subfloor must be solid, structurally sound and dimensionally stable. Ensure the subfloor is prepared to an SR1 surface regularity. If necessary an appropriate smoothing or levelling compound should be applied.

The surface the cable is being applied to must be smooth and if necessary primed such that a clean and continuous bond can be made. Check with adhesive manufacturer on priming requirements. The subfloor should be dry, frost-free, solid, weight-bearing and dimensionally stable. It must be free from contaminants that may impede adhesion such as dust, dirt, oil, grease, release agents, loose material or surface laitance.

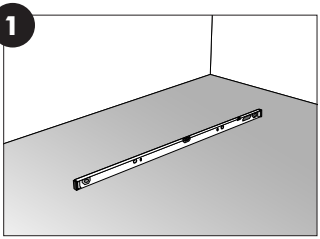
Subfloors previously covered in vinyl, cork or carpeting: all old flooring and glues must be removed.

Any materials on or within the subfloor must be suitable for supporting electric underfloor heating systems. If using temperature sensitive materials beneath the heating system, such as damp proofing or tanking systems, contact the manufacturer for advice.

Ensure timber subfloors are prepared in accordance with national standards and manufacturer instructions are properly followed to avoid subfloor movement to prevent any damage to the system. Where ceramic tiles are to be used, ensure that the subfloor meets the Tile Associations minimum specifications. Timber subfloors should be prepared for tiling in accordance with local tiling standards such as BS 5385-3.

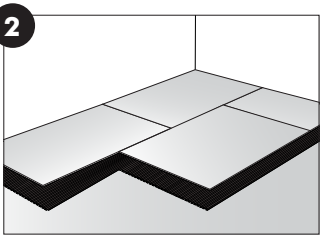
Do not commence installation of the system without ensuring that the resulting floor construction will meet the requirements of the floors intended use and its finish.

1



- The subfloor should be pre-insulated unless it is an intermediate floor. Ensure the subfloor is prepared to an SR1 Surface Regularity.

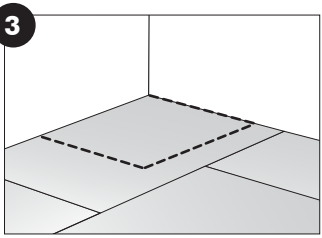
2



- We recommend installing suitable Insulation Boards for optimum performance referring to its instructions.

- If you plan to self-level over the system then install perimeter expansion strip around the perimeter of the room to allow for differential movement between finished floor level and walls.

3



- Mark out the floor with a permanent marker showing where fixtures and other unheated areas are going to be.

Cable layouts

In order to fit the cable into a specific area, it may be necessary to lay the heating cable around obstacles. Please refer to the examples below for guidance.

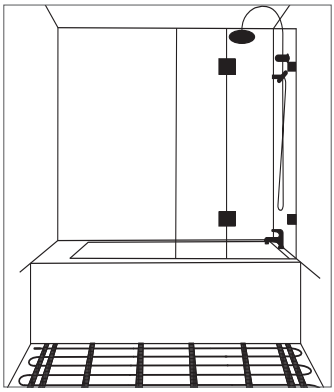
Please take a moment to double-check that your plan has the proper room dimensions and that you have the correct size and proper number of heating cables. Do not install under fixed objects such as kitchen or bathroom units.

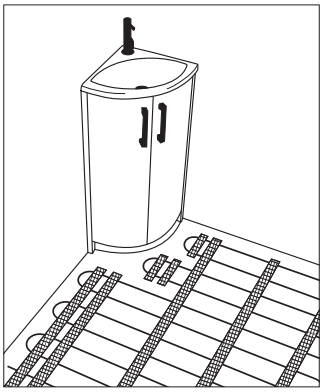
When laying two or more heating cables, ensure all coldtails reach the thermostat.

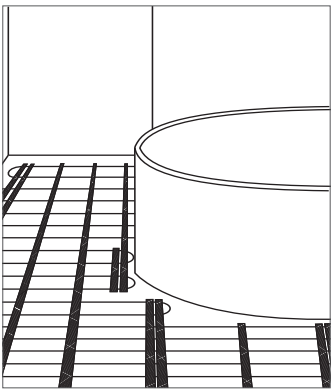
Do not use the heating cable in areas subject to high mechanical loads or impact.

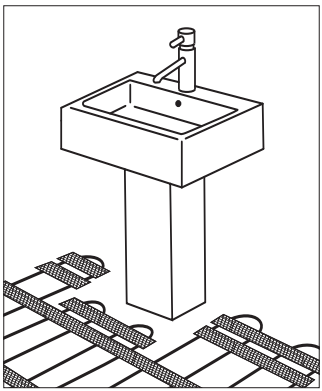
A plan of the heater layout is required as part of the control card so that any cutting or drilling after installation will not result in injury or damage.

The system should not be installed on irregular surfaces such as on stairs or up walls.



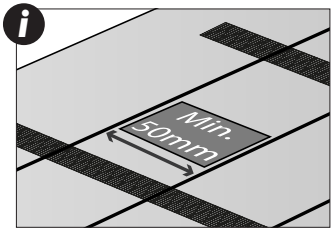




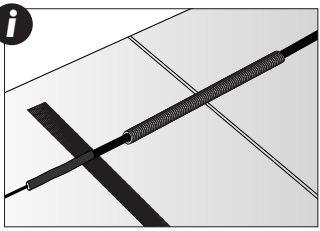


Sunstone ***RapidFit*** Loose Wire System						
Product code	Cable length (m)	Heat output				
		200W/m²	≈175W/m²	**150W/m²**	≈125W/m²	100W/m²
		c/c Spacing				
		60mm	70mm	**80mm**	95mm	120mm
		Perimeter Spacing				
		80mm	85mm	**90mm**	97.5mm	110mm
Heated area, m²						
RF-1	12.5	0.75	0.88	**1.00**	1.19	1.50
RF-2	25.0	1.50	1.75	**2.00**	2.38	3.00
RF-3	37.5	2.25	2.63	**3.00**	3.56	4.50
RF-4	50.0	3.00	3.50	**4.00**	4.75	6.00
RF-5	62.5	3.75	4.38	**5.00**	5.94	7.50

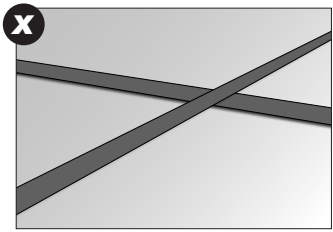
Important



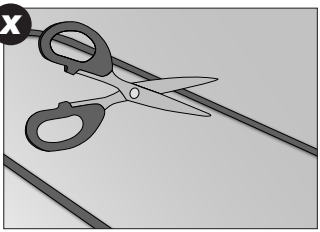
- Ensure that there is a minimum of 50mm between any parallel heating cable runs and that the cable is away from the influence of other heat sources, such as heating and hot water pipes, lighting fixtures or chimneys at all times.



- Where a heated floor is divided by expansion joints, individual heating cables should be used to heat each area. The coldtail may cross the expansion joint within a 300 mm long conduit as shown. The heating cable **MUST NOT** cross the expansion joint.



- When installing the heating cable **DO NOT** cross the cable over another run, over coldtails or the sensor. This will cause overheating and will damage the cable.



- The heating cable **MUST NOT** be cut, shortened, extended or left in a void, it must be fully installed within the layer of tile adhesive or levelling compound.

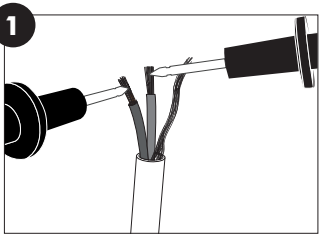
Maintain a minimum of 50mm between heating cable runs.

Maintain a perimeter spacing from the wall or other fixed objects of half your intended cable to cable spacing plus 50mm.

The heating cable should be evenly spaced to prevent thermal striping.

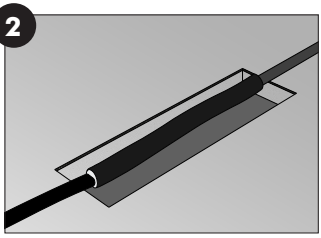
DO NOT install the heating cable in temperatures less than -10 °C.

1



- Measure and record the resistance of the heating cable in the "Resistance Before" column of the control card, supplied as part of this installation guide.
- Stop installation immediately and contact us if its resistance falls outside the range set out in the Reference resistance band table.

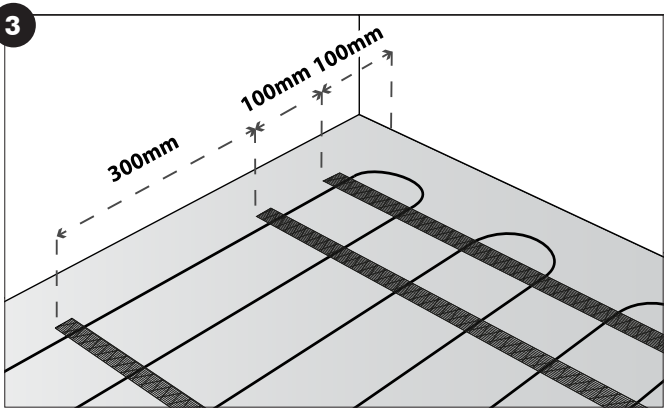
2



- Place the coldtail on the floor. Cut a section in the subfloor for the coldtail joint so that it sits at the same height as the heater.
- Secure the coldtail using tabs of electrical tape as necessary.

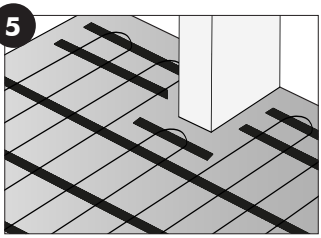
DO NOT tape over the coldtail joint. It must be fully embedded within the tile adhesive or levelling compound being laid over.

3



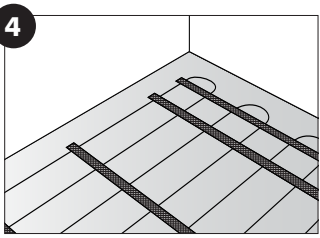
- Attach the double-sided tape to the subfloor, the 1st run 100mm from the wall and the 2nd 100mm from the 1st, then all others at 300mm intervals. The tape should be laid perpendicular to heating cable runs, observing wall perimeter spacing.
- Begin laying the heating cable at the necessary cable to cable spacing for the heat output required.

5



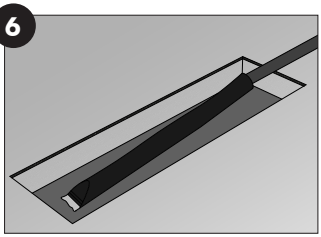
- To install the cable in awkward areas, use smaller sections of double-sided tape to navigate around the obstacle.

4



- Once the heating cable layout has been completed, apply the fibreglass tape over the runs of double-sided tape.

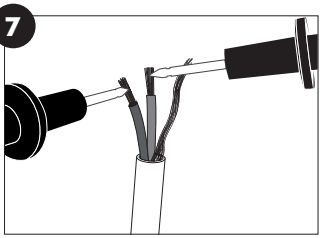
6



- At the end of the heating cable, you will find a termination joint. As with the coldtail joint at the beginning of the heating cable, this joint will have to be cut into the subfloor so that it sits at the same height as the heater.

DO NOT tape over the termination joint. It must be fully embedded within the tile adhesive or levelling compound being laid over.

7



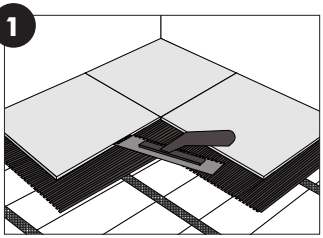
- Measure the resistance of the cable(s) and verify it is still in line with the Resistance Before reading previously taken.

- Stop installation immediately and contact us if its resistance has changed significantly or if it falls outside the range set out in the Reference Resistance Band table.

Underfloor heating performs the most efficiently with conductive, low resistance floor finishes such as stone and tiles. The maximum thermal resistance of the floor should not exceed 0.15 [m^2K/W].

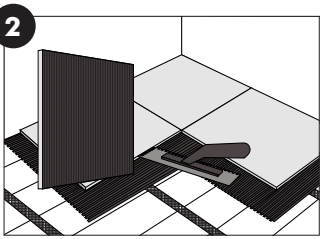
Ensure that the tile adhesive used is compatible with underfloor heating.

1



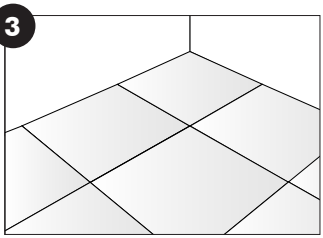
- Cover the installation with a full bed of flexible tile adhesive using a notched trowel. Take care not to damage or dislodge the heating cable. If using tiles smaller than 90 mm cover the installation with a levelling compound first.
- Carefully lay the tiles and press into the adhesive bed.

2



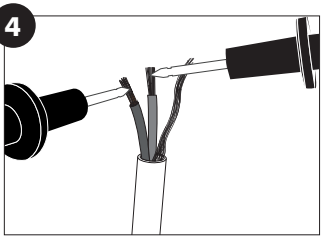
- After laying the first tile remove and ensure the tile is getting a full coverage of adhesive from your application.
- Ensure the width of the grout line is in line with the manufacturers instructions for the size and type of tile being used. Tiles must not be removed once the adhesive has set, doing so will damage the heater.

3



- Grout the floor as soon as possible as per the ceramic tile adhesive manufacturer's instructions.

4

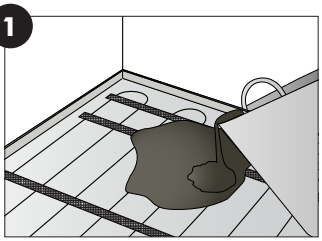


- When the tiles have been installed, conduct another resistance test to ensure the sensor and heater have not been damaged and record in the control card.

DO NOT switch on the heater until the tile adhesive and grout has fully cured. DO NOT use the heater to accelerate the drying process of the adhesive or levelling compound.

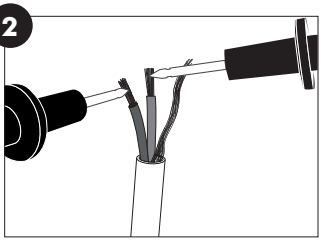
Before installing the floor finish its suitability for use with underfloor heating and its maximum operating temperature should be checked against required operating conditions.

1



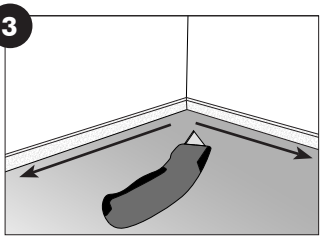
- If you are planning to install wood, carpet or vinyl over the heater a single layer of self levelling compound is required (minimum thickness: 10mm) over the heater. You must ensure that the heating cable(s), including joints are completely covered. It is important that the levelling compound is suitable for use with the underfloor heating.

2



- When the levelling compound has been installed, conduct another resistance test to ensure the sensor and heater have not been damaged and record in the control card.

3



- The 30 mm tall perimeter strip should finish just proud of the levelling compound but can be trimmed back flush with a utility knife if required.

You must ensure that the entire mat and any heating cable removed from the mesh are securely bonded to the subfloor before levelling.

Before installing the floor finish its suitability for use with underfloor heating and its maximum operating temperature should be checked against required operating conditions.

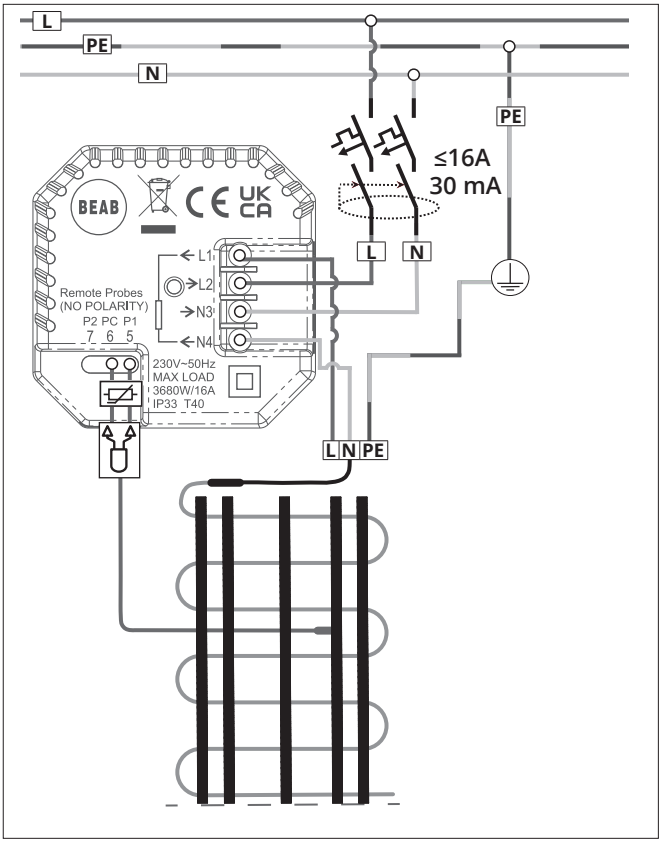
Many levelling compound manufacturers inaccurately state product volume. Coverage is often given as "#m^2 at #mm depth," but depths are frequently rounded up from the nearest 0.5mm, causing underestimation of bags needed.

We strongly recommend using levelling pegs to maintain consistent depth. When calculating volume, factor in subfloor irregularities. For an SR1 subfloor with up to 3mm deviations, expect to add about 1.5 l/m^2 of leveller to fill cavities and maintain minimum depth.

The thermostat MUST be isolated from the mains supply before commencing any wiring

Instructions for fitting the thermostat can be found inside the thermostat box. The thermostat should be connected to the main electrical supply by suitably rated circuit breaker that disconnects all poles with at least 3 mm contact separation. Use MCB's, RCBO's or fuses for this purpose.

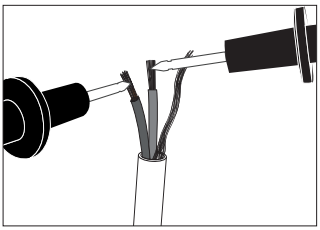
The heater power cable consists of conductors coloured brown (live), blue (neutral) and earth braid. If you are installing more than one heater a junction box will be required. Final connections to the main electricity supply MUST be completed in accordance with the wiring regulations by a qualified electrician.



Each cable and sensor must be tested before they are installed, once they have been laid but before tiling or laying levelling compound and again before they are connected to the thermostat. The resistance (ohms) should be measured and recorded in the control card at the end of the manual.

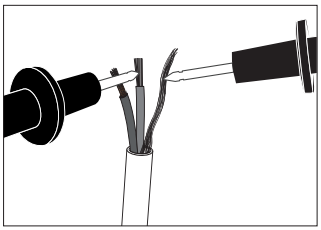
Due to the high resistance of the heating element, it may not be possible to get a continuity reading from the heating cable and as such, continuity testers are not an acceptable substitution for testing. When checking resistance, make sure your hands do not touch the meter's probes as the measurement will include your internal body resistance and render the measurement inaccurate. If you do not get the expected results or at any time you believe there may be a problem, please contact us for guidance.

Heating cable resistance test



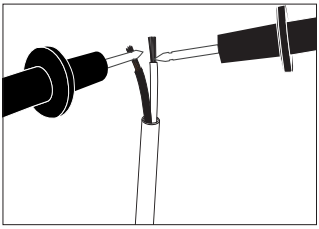
- Set a multimeter or ohmmeter to record resistance in the range of 0-500 Ω. Measure the resistance across the live (brown) and neutral (blue) wires. Ensure the measured resistance is within the Reference Resistance Band for the cable size being tested

Earth fault test



- Set a multimeter or ohmmeter to record resistance in the range of 1 MΩ or greater if available. Measure the resistance across the live (brown) and neutral (blue) wires to the earth braid. Ensure the measured resistance is showing as greater than 500 MΩ or infinite if the meter cannot read this high.
- Set an insulation resistance tester to 1000 V DC. Measure the resistance across the live (brown) and neutral (blue) wires to the earth braid wire. After 1 minute of application, ensure the measured resistance is showing greater than 50 MΩ to indicate a pass.

Sensor resistance test



- Ensure that the sensor is tested before the final finish has been fitted. Please to refer to the thermostat manual for further details.

Sunstone ***RapidFit***	
Product code	RF-X *X = Area coverage at 80mm c-c spacing*
Operating voltage	230 V AC: 50 Hz
Protection	Class II ⧈
Earth type	Functional earth ⏚ *(Aluminium mylar tape with copper drain wire)*
Connection	3.0 m coldtail (2-core & earth)
Coldtail size	2C x 0.75 mm^2 (Up to 6.0A)
IP rating	X7
Specific power	12W/m
Output rating	150 W/m^2 (80mm spacing)
Heating cores	Dual core, multi-strand heating element
Inner / Outer insulation	ETFE / PVC
Sheath colour	Blue
Cable thickness	≈3.2mm
Minimum installation temperature	-10 °C

Sunstone ***RapidFit*** Loose Wire System

Product code	Cable length (m)	Power (W)	Current (A)	Total Resistance, Ω @20°C			Heat output				
							200W/m²	≈175W/m²	**150W/m²**	≈125W/m²	100W/m²
							c/c Spacing				
							60mm	70mm	**80mm**	95mm	120mm
							Perimeter Spacing				
							80mm	85mm	**90mm**	97.5mm	110mm
				Min.	Nom.	Max.	Heated area (m²)				
RF-1	12.5	150	0.65	335.0	**352.7**	370.3	0.75	0.88	**1.00**	1.19	1.50
RF-2	25.0	300	1.30	167.5	**176.3**	185.2	1.50	1.75	**2.00**	2.38	3.00
RF-3	37.5	450	1.96	111.7	**117.6**	123.4	2.25	2.63	**3.00**	3.56	4.50
RF-4	50.0	600	2.61	83.8	**88.2**	92.6	3.00	3.50	**4.00**	4.75	6.00
RF-5	62.5	750	3.26	67.0	**70.5**	74.1	3.75	4.38	**5.00**	5.94	7.50

Sunstone underfloor heating is guaranteed to be free from defects in materials and workmanship under normal use and maintenance, and is guaranteed to remain so subject to the limitations and conditions described below. Sunstone ***RapidFit*** Loose Wire system is guaranteed for a period of 10 years when installed beneath the floor covering under which it is first fitted, except as provided below (and your attention is drawn to the exclusions listed at the end of this guarantee).

This 10 year warranty applies:

1 Only if the unit is registered within 30 days after purchase. Registration can be completed online at www.sunstone.co.uk. In the event of a claim, proof of purchase is required, so keep your invoice and receipt - such invoice and receipt should state the exact model that has been purchased;

2 Only if the heater has been earthed and protected by a Residual Current Device (RCD/RCBO) at all times.

All warranties are voided if the floor covering over Suntone heater(s) are damaged, lifted, replaced, repaired or covered with subsequent layers of flooring. The warranty period begins on the date of purchase. During the period of the guarantee Sunstone will arrange for the heater to be repaired or (at its discretion) have parts replaced free of charge or issue a refund for the product only. The cost of the repair or replacement is your only remedy under this guarantee which does not affect your statutory rights.

Such cost does not extend to any cost other than direct cost of repair or replacement by Sunstone and does not extend to costs of relaying, replacing or repairing any floor covering or floor. If the heater fails due to damage caused during installation or tiling, this guarantee does not apply. It is therefore important to check that the heater is working (as specified in the installation manual) prior to tiling.

SUNSTONE SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO EXTRA UTILITY EXPENSES OR DAMAGES TO PROPERTY.

Sunstone is not responsible for:

1 Damage or repairs required as a consequence of faulty installation or application.

2 Damage as a result of floods, fires, winds, lightening, accidents, corrosive atmosphere or other conditions beyond the control of Sunstone.

3 Use of components or accessories not compatible with this unit.

4 Products installed outside of any country or territory within which Sunstone operates.

5 Normal maintenance as described in the installation and operating manual, such as cleaning thermostat.

6 Parts not supplied or designated by Sunstone.

7 Damage or repairs required as a result of any improper use, maintenance, operation or servicing.

8 Failure to start due to interruption and/or inadequate electrical service.

9 Any damage caused by frozen or broken water pipes in the event of equipment failure.

10 Changes in the appearance of the product that does not affect its performance.

Warning!

Radiant direct floor heating system. Risk of shock or fire

Flexible sheet heating units are installed within the floor. **DO NOT** penetrate with nails, screws, or similar devices. **DO NOT** restrict the thermal emission of the heated floor. **DO NOT** affix materials other than those recommended

Checklist - Installer

Is the heating system, including manufactured joints, underneath the floor covering embedded in adhesive/levelling compound?	☐
Can you confirm that the manufactured joints and floor sensor tip, have NOT been taped over during installation?	☐

Model	Location	Power	System resistance			Insulation resistance test	Sensor resistance
			Before	During	After		

Installer name, company: .....

Installer signed: ..... **Date:** .....

Checklist - Electrician

Is the heating cable is protected a dedicated 30 mA RCD/RCBO or an existing RCD/RCBO? Time delay RCD's must not be used.	☐
Is the system separated from the power supply by suitably rated circuit breaker that disconnects all poles with at least 3 mm contact separation, for example, MCB's, RCBO's or fuses?	☐

Model	Location	Power	System resistance	Insulation resistance test	Sensor resistance
			Pre-connection		

Electrician name, company .....

Electrician signed ..... **Date:** .....

This form must be completed as part of the Sunstone Guarantee. Ensure that the resistance values are as per the instruction manual. This control card, a layout plan and EcoDesign compliance information card must be left permanently fixed near the consumer unit.

Sunstone T: 0345 034 8272 **W:** www.sunstone.co.uk
704 Tudor Estate ■ Abbey Road ■ London ■ NW10 7UW ■ UK
Ottostraße 3 ■ 27793 Wildeshausen ■ DE

EcoDesign compliance information card

This product is an electric underfloor local space heater and, in order to be compliant with the mandatory EcoDesign requirements set out in Commission Regulation (EU) 2024/1103, needs to be complemented with a control providing at least the following control functions:

Type of heat output/room temperature control (*one of*)

TD	Electronic room temperature control plus day timer *(Minimum of 3 control options required)*	☐
TW	Electronic room temperature control plus week timer *(Minimum of 1 control options required)*	☐

Other control options (multiple selections possible)

f2	Open window detection	☐
f3	Distance control option	☐
f4	Adaptive start control	☐
f7	Self-learning functionality	☐
f8	Control accuracy	☐

Room temperature control power consumption
The control must include an off mode and/or a standby mode, in addition to an idle mode. The power consumption must comply with requirements for each mode where applicable.

In off mode	$P_o \leq 0.5W$	☐
In standby mode (select one)	$P_{sm} \leq 0.5W$	☐
	$P_{dsm} \leq 1.0W$ (if control has an active display in standby mode)	☐
	$P_{nsm} \leq 2.0W$ (if control has a network connection in standby mode)	☐
In idle mode (select one)	$P_{idle} \leq 1.0W$	☐
	$P_{nidle} \leq 3.0W$ (if control has a network connection)	☐

Below are examples of thermostats which would be compliant and include these control function codes.

A typical programmable thermostat with a 1 or 5/2 Day schedule and:

- Adaptive Start
- Open Window detection
- An accuracy of better than +/-2°C

Control function code: TD (f2/f4/f8)

A typical Programmable Thermostat with a 7 Day schedule and:

- An accuracy of better than +/-2°C

Control function code: TW (f8)

NOTE: Manual thermostats alone are not compliant.

For the combined heat output of all local electric space heaters attached to an individual control please refer to the technical specification page of this manual.

You must complete the above card according to the definitions of the control function codes specified in Regulation (EU) 2024/1103 to ensure compatibility with this local electric space heater.

Only functions that are active after the control has been commissioned can be declared and used for compliance.

Control function codes

Required to be in manual as part Regulation (EU) 2024/1103

		Code of temperature control (TC)	Control functions							
			f1	f2	f3	f4	f5	f6	f7	f8
Type of temperature control	Single stage, no temperature control	NC								
	Two or more manual stages, no temperature control	TX								
	Mechanic thermostat room temperature control	TM								
	Electronic room temperature control	TE								
	Electronic room temperature control plus day timer	TD								
	Electronic room temperature control plus week timer	TW								
Control functions	Presence detection		1							
	Open window detection			2						
	Distance control option				3					
	Adaptive start control					4				
	Working time limitation						5			
	Black bulb sensor							6		
	Self-learning functionality								7	
	Control accuracy with CA < 2 Kelvin and CSD < 2 Kelvin									8

Draw a plan showing the layout and location of the heating cable(s)

CARELESSNESS CAUSES FIRE

Do not exceed a thermal resistance of 0.15 m^2K/W (1.5 tog) over the system, including any floor finishes.

DO NOT place items on an electric floor heating system which exceed the systems thermal resistance limit. Doing so will cause the system to overheat and may present a fire risk.

Such items include:

- ! Flat bottomed furniture
- ! Mattresses
- ! Heavy rugs
- ! Beanbags
- ! Animal beds
- ! Large pouffes/cushions

SunStone
electric underfloor heating

SunStone Underfloor Heating

Tel: 0345 034 8272

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