

10 Year
Guarantee

ECOFLEX

undertile heating cable kit

This guarantee is only valid under the following conditions:

- All electrical connections were carried out by a qualified electrician.
- The guarantee covers faults in material for 10 years of the ECOFLEX cable and 2 years for other components from the date of purchase.
- The completed guarantee and proof of purchase must be presented in connection with guarantee claims.
- The ECOFLEX installation plan has been completed by the installer and the electrician.
- The guarantee covers the repair/replacement of goods found to be faulty and does not cover secondary charges relating to the repair/replacement of any floor covering.
- The Flexel guarantee does not cover faults resulting from incorrect design or installation damage caused by others.

Owner's Details			
Name			
Address			
	Postcode		
Contact Tel.	Email Address		

Cable Kit Installer's Details			
Name		Signature	
Address			
	Postcode		
Contact Tel.	Email Address		

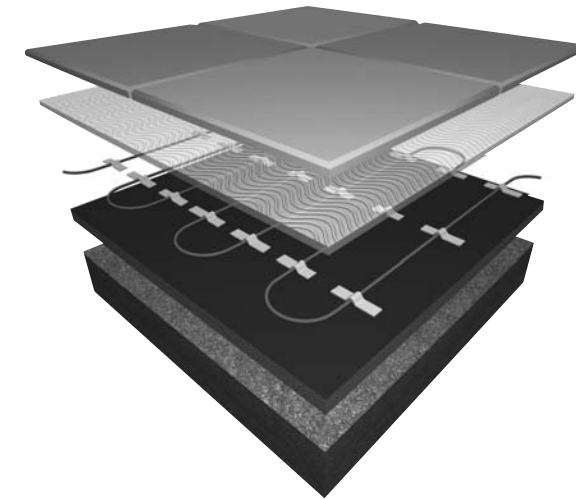
Electrician's Details			
Name		Signature	
Address			
	Postcode		
Contact Tel.	Email Address		
Professional body enrolment number			

This instruction manual must be left at the distribution board along with a copy of the thermostat operating instructions and the original sales receipt. The supplied stickers should be placed near the distribution board and in the room installed with the underfloor heating.



ECOFLEX

undertile heating cable kit

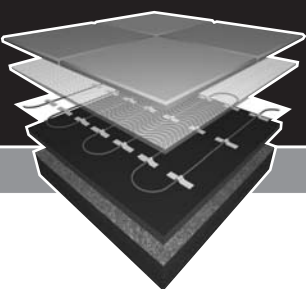


The versatile electric underfloor heating solution for all tile and stone floors

Important

This manual must be fully read and understood before installing your underfloor heating system. Incorrect installation or failure to complete the guarantee slip and ECOFLEX installation plan will invalidate the Flexel guarantee.

THIS BOOKLET TOGETHER WITH THE THERMOSTAT OPERATING INSTRUCTION, ORIGINAL SALES RECEIPT AND SUPPLIED STICKER MUST BE PLACED BY THE DISTRIBUTION BOARD.



ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

Installation is straight forward. However if you require assistance

call our dedicated technical team on 01592 760928



Introduction 1

Installation	
Floor Constructions	2
Pre-Installation Checklist	3-4
Sizing Guide	5
Planning Your Layout Pattern	6
Laying Multiple Cables	6
Electrical Provision	7
Preparing The Floor	8
Planning Your Installation	9
Laying The Cable	10-11
Tiling Over Your Installation	12
Heat Up Times	13
Troubleshooting	13
Cable Construction	13

Operating Manual	
What Is Radiant Heat?	14
Operating Instructions	15

Guarantee	
ECOFLEX Installation Plan	16-17

Congratulations! You have purchased a quality underfloor heating product from Flexel International Limited a leading UK manufacturer of specialist electric underfloor heating systems.

For additional information on our complete product range please visit www.flexel.co.uk.

EASY TO INSTALL

By following these simple instructions, you will be able to install the ECOFLEX undertile cable kit without any difficulties. Only the final connection to the mains supply MUST be carried out by a suitably qualified electrician.

INSTALL ALMOST ANYWHERE

ECOFLEX can be installed on top of either a suitably prepared suspended timber floor or a solid concrete floor enabling installation in all room types. ECOFLEX can also be installed under many floor coverings including: Tile, natural stone, slate, porcelain, marble, limestone & terracotta.

MAINTENANCE FREE, SAFE, OVERALL WARMTH

Totally safe, under tile and stone floors, ECOFLEX'S radiated heat provides overall warmth and comfort without the usual dust carrying convective air currents of conventional radiator systems. The large heated area provides an even temperature distribution and once installed it is completely maintenance free.

HOW EFFECTIVE IS UNDER TILE HEATING?

ECOFLEX is a highly effective direct acting radiant heating system. It can provide primary heating or just be used to warm a floor and provide background heat. If you are considering using your ECOFLEX undertile cable kit as a primary or "sole" heat source, heat loss calculations for the room should be performed by your architect or heating engineer.

THIS BOX CONTAINS	
ECOFLEX Cable	
ADHESIVE TAPE	
THERMOSTAT FLOOR PROBE CONDUIT	
FLOOR PRIMER & ROLLER	
INSTRUCTIONS & GUARANTEE	

REQUIRED ACCESSORIES	
THERMOSTAT (analogue or digital)	

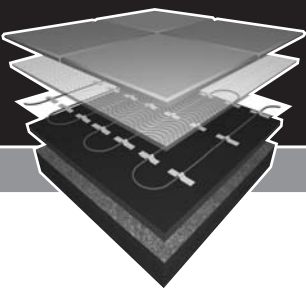
ADDITIONAL ACCESSORIES (available separately)	
ECOMAX Thermal Insulation Boards	
GLASS FIBRE TAPE	

Installation is straight forward. However if you require assistance call our dedicated technical team now on 01592 760928

Please read the following instructions carefully to ensure ease of installation. Remember that the final electrical connections must be made by a qualified electrician and also that the guarantee certificate must be filled in and signed by the electrician to ensure that you are covered by our guarantee.

Flexel International Ltd, the manufacturer of ECOFLEX Undertile Cable Kits, accepts no liability, expressed or implied, for any loss or consequential damage suffered as a result of installations which do not follow this instruction booklet.

ECOFLEX Undertile Cable Kits are part of the Flexel Underfloor Heating Systems product range by Flexel International Ltd, Queensway Ind Est, Glenrothes, Fife, KY7 5QF, Scotland. T 01592 760928 F 01592 760929 W www.flexel.co.uk E enquiries@flexel.co.uk



ECOFLEX - The versatile electric underfloor heating

Installation is straight forward. However if you require assistance

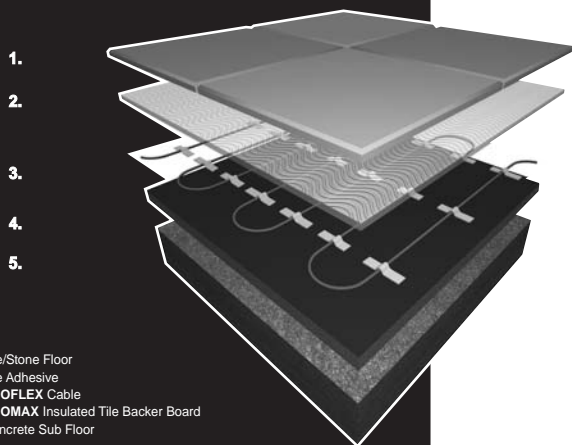
solution for all tile and stone floors

call our dedicated technical team on 01592 760928



FLOOR CONSTRUCTIONS

Solid Concrete Floors



ECOFLEX cable kits can be installed on top of existing wooden or concrete floors that are sound and suitably prepared. To ensure the durability of ceramic tiling the subfloor should be suitably constructed and prepared, whether heated or not. The subfloor should remain rigid with minimal deflection to support the final tiled floor weight. Additional information on floor construction, preparation and all suitable adhesives is available from tile adhesive manufacturers.

First inspect the subfloor surface. Remove all debris and grind out or remove any sharp objects. It is important to remove any sharp edges or pointed objects that may damage the heating cable. The subfloor should be clean, dry and smooth before commencing installation of the cable.

For CONCRETE SUBFLOORS we strongly recommend adding a layer of insulation to the slab prior to installing the floor heating system. Flexel recommend the use of an insulated tile backer board with an extruded polystyrene core and polymer cement facing, such as ECOMAX insulation board. This will minimise heat losses to the subfloor and ensure quicker heat up times for the floor.

Fix the insulation to the subfloor, following the manufacturer's instructions. The ECOFLEX cable system can be laid directly on top before being tiled over. It is important that you use a good quality flexible tile adhesive and grout.

When fitting ECOFLEX cable to TIMBER SUBFLOORS it is essential that you take the standard precautions to stabilise the floor to prevent movement. You must always over-board the timber floor boards or chipboard with a surface suitable for tiling. Flexel recommend ECOMAX insulated tile backer board or primed 18mm WBP plywood.

Cables can be connected in parallel to heat larger areas.

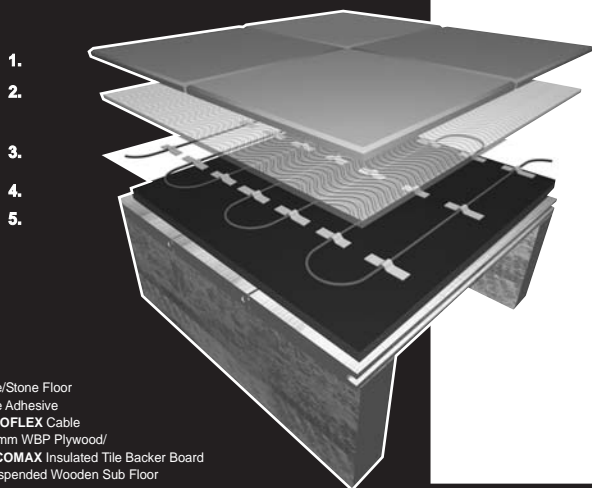
The minimum cable spacing is 50mm.

However it can be increased to a maximum of 150mm.

The minimum spacing from the walls MUST be 50mm

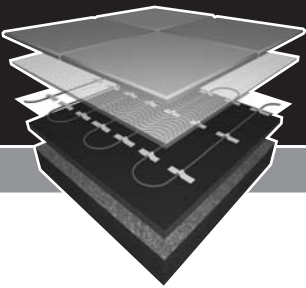
Product Code	Wattage (W)	Cable Length (m)	Amperage (A)	Cable Resistance (Ω)
CK1	225	16.77	0.98	235.1
CK2	350	28.90	1.52	151.1
CK3	525	39.21	2.28	100.7
CK4	700	54.76	3.04	75.5
CK5	875	65.01	3.80	60.4

Suspended Wooden Floors



Area to be heated (m ²)	Product Code	Cable Spacing (mm)
1.2-1.3	CK1	70
1.4-1.5	CK1	80
1.6-1.9	CK1	90
2.0-2.2	CK2	70
2.3-2.6	CK2	80
2.7-2.9	CK2	90
3.0-3.2	CK3	70
3.4-3.6	CK3	80
3.7-3.9	CK3	90
4.0-4.2	CK4	70
4.3-4.6	CK4	80
4.7-4.9	CK4	90
5.0-5.4	CK5	70
5.5-5.9	CK5	80
6.0-6.4	CK5	90
6.5-6.9	2 x CK3	80
7.0-7.4	2 x CK3	90
7.5-8.1	CK3 + CK4	80
8.2-8.9	CK3 + CK4	90
9.0-9.6	2 x CK4	80
9.7-9.9	2 x CK4	90
10.0-10.6	CK4 + CK5	80

Area to be heated (m ²)	Product Code	Cable Spacing (mm)
10.7-10.9	CK4 + CK5	80
11.0-11.5	2 x CK5	80
11.0-11.9	2 x CK5	90
12.0-12.7	2 x CK3 + CK5	80
12.8-13.4	2 x CK3 + CK5	90
13.5-13.9	3 x CK4	80
14.0-14.4	3 x CK4	90
14.5-15.1	2 x CK4 + CK5	80
15.2-15.9	2 x CK4 + CK4	90
16.0-16.7	CK4 + 2 x CK5	80
16.8-17.4	CK4 + 2 x CK5	90
17.5-18.1	3 x CK5	80
18.2-18.9	3 x CK5	90
19.0-19.7	2 x CK3 + 2 x CK5	80
19.8-20.4	2 x CK3 + 2 x CK5	90
20.5-21.1	CK2 + 3 x CK5	80
21.2-21.9	CK2 + 3 x CK5	90
22.0-22.7	2 x CK4 + 2 x CK5	80
22.8-23.4	2 x CK4 + 2 x CK5	90
23.5-24.1	CK4 + 3 x CK5	80
24.2-24.9	CK4 + 3 x CK5	90



ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

Installation is straight forward. However if you require assistance

call our dedicated technical team on 01592 760928



PRE-INSTALLATION CHECKLIST

Important: Please read and fully understand these instructions before commencing

ALWAYS

- ALWAYS test the resistance of the heating cable *Before, During* and *After* installation.
- ALWAYS test the resistance of the thermostat temperature floor probe before installation
- ALWAYS ensure that all the orange heating cable is installed below the tiled surface.
- ALWAYS leave a 50mm clearance between the heating cable and perimeter walls.
- ALWAYS fully encapsulate the orange heating cable in adhesive with no voids or gaps.
- ALWAYS ensure the heating system is protected by a 30mA RCD for safe operation.
- ALWAYS install the thermostat floor probe in the conduit provided
- ALWAYS maintain a minimum 50mm gap between cable runs.
- ALWAYS install the floor probe in the protective conduit provided.



NEVER

- NEVER fix the heating cable to the floor with staples or clips. Use the tape provided.
- NEVER cut or shorten the orange heating cable.
- NEVER connect 2 heating cables together in series (always parallel).
- NEVER allow the heating cable to cross, overlap or touch each other.
- NEVER place excessive weight (tools or multiple tile packs) on the heating cable.
- NEVER place built-in furniture or sanitary ware on top of the heated area of the floor.
- NEVER run a power cord or floor probe across a heating cable.
- NEVER place sharp objects or tools on the heating cables during tiling.
- NEVER turn on the heating system until the tile adhesive has dried out.
- NEVER run a heating cable in or through a wall or up steps or stairs.
- NEVER allow traffic over the installed heating cable until it is fully protected.



CAREFUL, CAREFUL, CAREFUL

Your heating system will provide you with many years of reliable, maintenance free service if care is taken during installation.

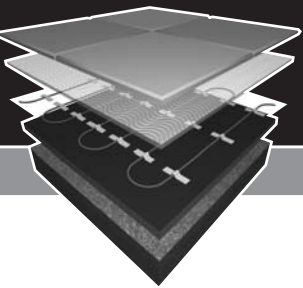
To avoid damage to the heating cable during installation, care must be taken so that tools with sharp edges or points are not dropped or used recklessly on the heating cables. Always wear flat rubber soled shoes when walking on the cable.

We recommend covering the exposed cable areas with a double layer of thick cardboard or carpet off-cuts if the floor is not being tiled immediately. Cordon off the unfinished room to prevent unwanted access.

TESTING, TESTING 1,2,3

The most important procedure of the installation process is to test the resistance of the floor heating cable *before, during* and *after* its installation.

- 1) BEFORE - Test the resistance of the heating cable before commencing installation to ensure that it has not been damaged in transit.
- 2) DURING - Test the resistance of each heating cable once it has been secured to the subfloor to ensure it has not been damaged during the installation process.
- 3) AFTER - Once the floor finish has been laid. Test again to ensure that the heating cable was not damaged during the tiling process.



ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

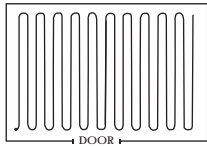
Installation is straight forward. However if you require assistance

call our dedicated technical team on 01592 760928



PLANNING YOUR LAYING PATTERN

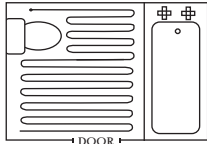
STANDARD ROOM



ROOM WITH CENTRAL OBSTACLE



BATHROOM



Before commencing laying the ECOFLEX heating cable, plan your installation using a sketch marking your laying pattern and planning the positions for the wall mounted thermostat, floor probe and junction box.

In new build installations, mark the position of floor fitted objects that will be installed once the floor is finished eg baths, showers, wc etc. These **MUST** be avoided. Also avoid any areas where floor fixings may require to be drilled. This will allow you to calculate the "free" or "effective" floor area and select the appropriate cable kit size.

We recommend that you spend time planning your installation and selecting the correct cable kit size as **THE CABLE CANNOT BE SHORTENED.**

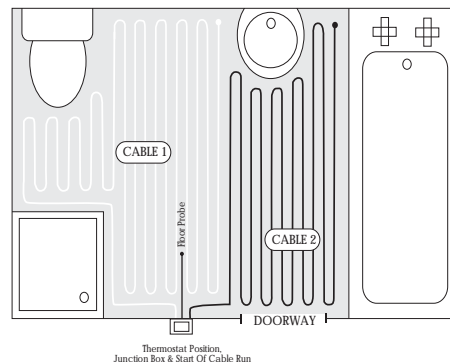
Note:
Please ensure that the cable kit(s) supplied matches your requirement for area coverage and heat output by cross referencing on the sizing chart on *page 3* before commencing installation.

INSTALLING HEATING IN LARGER AREAS

A heating system for larger areas will require 2 or more heating cables.

It is important to note that when installing multiple heating cables to take the following precautions:

- Plan your installations so that all cable cold tails (black power cables) terminate in one junction box.
- The multiple heating cables are joined in parallel at a junction box (**NEVER** in series).
- The orange heating cables should never touch or cross at any point (50mm gap minimum).
- Heating cables should never touch or cross over the floor probe.
- A single thermostat can be installed to control multiple heating cables. When the combined heat load of the cables exceeds the rating of the thermostat a suitable contactor **MUST** be installed to switch the load.



ELECTRICAL PROVISION

INSTALL THE RCD

An RCD must be used by the electrician whether it is a dedicated or existing RCD. A combination "double pole switched" fused-spur /RCD can be used by the electrician where the total load is less than 13A.

INSTALL ELECTRICAL BOXES

A 35mm single gang back box is required for the thermostat. If you are installing more than 2 cables, a junction box will be necessary. The wiring to the thermostat should be chased into the wall or can be protected by plastic conduit.

CONNECTING THE THERMOSTAT

The thermostat should be connected to the main electrical supply via a suitable and double pole isolator fuse or circuit breaker, "double pole isolater" in accordance with current wiring regulations. The thermostat must be installed in the room or area to be heated, except in bathrooms where the thermostat **MUST** be sited outside the bathroom. The thermostat floor probe **MUST** be installed inside the protective conduit (supplied).

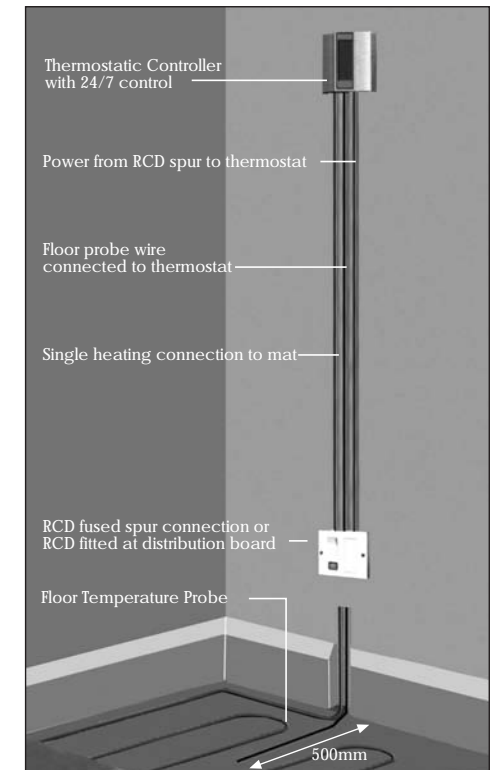
Note:
The floor probe cable can be extended up to 50m using suitable cable.

The floor probe **MUST** be placed between 2 runs of cable approximately 500mm from the wall.

The floor probe cable **MUST NEVER** cross the heating cable .

The floor probe **MUST** be installed in the conduit provided.

Check the resistance of the floor probe before installation & compare against the value in the thermostat instructions.





PREPARING THE FLOOR

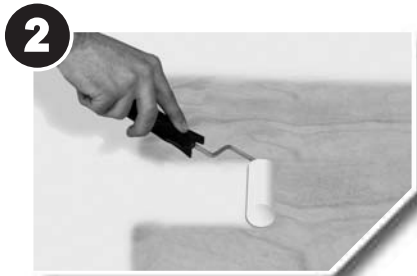


Ensure floor is clean & dust free

Before commencing installation of the heating cable ensure the subfloor is smooth, clean, dry and free from dust or grease.

Subfloors that have a rough finish should be prepared using a suitable levelling compound.

New concrete subfloors should be allowed to dry completely before commencing installation. This may take 8 weeks or more.



Evenly apply primer

Paint the prepared subfloor with the supplied primer. This is a one-part, water-based, multi-purpose acrylic moisture barrier and primer for substrate priming prior to the installation of ceramic tiles, cementitious and gypsum-based self-levelling screeds.

It is coloured for easier coverage control and dries to a clear finish.

The primer must be allowed to dry for a minimum of 3 hours. The drying process can be accelerated by raising the ambient temperature in the room. Ensure that the room is well ventilated during the drying process.



Avoid walking on the primed floor

Avoid foot traffic over the floor area, once primed.

Note:
If tiling onto an existing tiled floor, DO NOT apply the primer supplied. The floor should be cleaned with a suitable cleaning product.

If the subfloor has been prepared with any sort of sealant DO NOT use the primer supplied in this kit.

PLANNING YOUR INSTALLATION

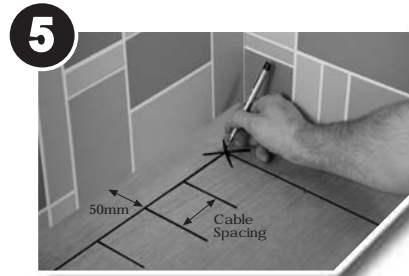


Measure up

Plan your installation using a sketch, marking your laying pattern and planning the positions for your floor probe, connection box and thermostat.

You should avoid all floor obstructions like baths, shower trays and floor mounted cupboards. Also avoid any areas where the floor may require to be drilled.

Once you have calculated your actual heated floor area, in square metres, use the sizing chart on page 3 of this manual to obtain the cable spacing.



Mark start point

Mark the layout of the ECOFLEX cable on the prepared subfloor with a fibre tipped pen.



Mark perimeter & cable spacing

Mark the perimeter of your heated area together with the cable spacing.

Mark your cable start point. Ensure that this is close to the planned thermostat position. The cable "cold tail" lead is 3m long.

The cable spacing and perimeter wall clearance must be a MINIMUM of 50mm.

ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

Installation is straight forward. However if you require assistance

call our dedicated technical team on 01592 760928



LAYING THE CABLE



Cut a channel in the subfloor to accommodate the floor probe

Before commencing with the cable layout cut a groove in the floor to accommodate the floor probe for the thermostat. The probe should be installed in the 12mm diameter flexible conduit supplied with the thermostat. The probe should be positioned between 2 cable loops approximately 500mm into the heated floor. Seal the end of the conduit with tape to prevent adhesive entering and tape the length of conduit into the floor.



Dispense cable through the perforated guide hole on box

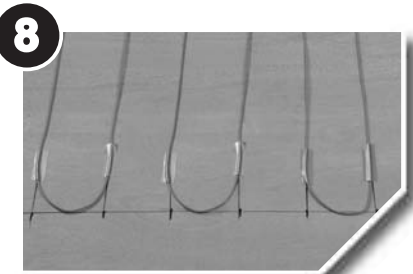
Before commencing installation remove the plastic film outer packaging from the reel of ECOFLEX cable and carefully cut the ties securing the heating cable. Place the cable reel back in the box and feed the black power cable through the perforated guide hole before closing the box. Only dispense sufficient cable to lay a single loop and secure in position before dispensing the next amount.

Once satisfied with the proposed cable layout, gently unroll the first 3m of the cable from the roll. This is the power supply cable ("cold tail"). Where this black supply cable joins the orange heating cable the joint should be taped to the marked start point.

Then unroll the cable and lay in parallel loops using your pre-marked floor as a guide. Secure the cable to the floor at intervals using 25mm strips of the adhesive tape supplied. At this point only use a minimal amount of fixing tape as you may wish to reposition the cable loops once the whole cable has been unrolled to achieve the best fit for the room.

Do not remove the cable from the drum before laying as it may twist and make installation difficult. Only unroll sufficient cable to lay a single loop. Place and tape in position before unrolling the next quantity.

The cable has been designed to have excellent shape memory. This means that you can form the laying loops and they will remain in place making the laying process quicker and easier.



Lay cable in parallel loops and secure cable with adhesive tape



Ensure cable is laid in parallel lines

Once the entire cable has been laid out you may wish, if necessary, to alter the cable spacing to achieve balanced coverage of the area to be heated. This is perfectly acceptable if the following guidelines are followed:

- 1) Always maintain a minimum 50mm gap between cables.
- 2) The orange heating cables should never cross.

Once the heating cable layout is complete, the entire length of cable should be taped to the floor.

The cable should be centrally positioned in the width of adhesive tape, with minimal trapped air space beneath the taped cable, to provide maximum cable protection. This can be achieved by tensioning the heating cable from the end to ensure it is straight before applying the tape. All the heating cable (orange cable) should be covered by the adhesive tape, even the end loops. This may require multiple applications of tape especially where the cable is looped to achieve full coverage.

When applying the tape it is important to minimise the amount of air trapped between the tape, cable and the floor. Run your forefinger and thumb along the length of the cable, applying slight pressure to expel any air trapped between the cable and the tape.

It may be necessary to recess the increase in height presented by the power cable joint and cable end joint into the floor. This should be done by chiselling a channel into the subfloor to accommodate the joints and then taping in position (see image 6). Take care not to damage the cable and remove all resulting debris. The cable joints should be handled carefully and not bent or stressed in any way.



Adjust cable spacings if necessary



Cover with adhesive tape

Note:
ECOFLEX can only be installed on the same level. DO NOT lay ECOFLEX cable up walls or stairways.

ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

Installation is straight forward. However if you require assistance

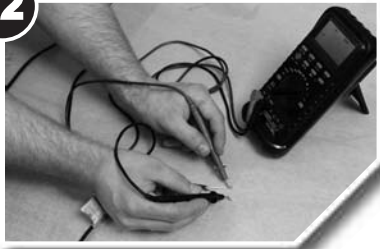
call our dedicated technical team on 01592 760928



TILING OVER YOUR INSTALLATION

TROUBLESHOOTING

12



Check cable resistance before starting & regularly throughout tiling process

CHECKING RESISTANCE

Using an Ohm meter, check the heating cable resistance. It should match the value on the label attached to the power cable (black cable) with a tolerance of -5 to +10%. You should plan to check the heating cable resistance regularly during the tiling process (every half hour).

If the resistance reading varies outwith the tolerance stop immediately and call our TECHNICAL HELPLINE on 01592 760928.

TILING OVER YOUR INSTALLATION

The adhesive and grout must be flexible and suitable for use with underfloor heating. Refer to the tile adhesive manufacturer for suitability.

Check that the heating cable is taped in position and fully covered. Tile as normal, taking care not to disturb the heating cable. Use a notched plastic trowel if possible. Take care not to allow the trowel to come into contact with the heating cable when applying the adhesive. Use sufficient adhesive to ensure that no air gaps or voids are left under the tile. The adhesive should be gently combed in the direction of the heating cable runs to minimise the chance of dislodging the taped heating cable.

The heating cable is robust, however care must be taken not to damage it during tiling. Use a piece of carpet or thick cardboard as a protective layer or kneeling board to prevent damage to the heating cable from footwear or knees during the tiling process.

The underfloor heating must not be turned on immediately after the tiling process. Consult the adhesive manufacturer as to a suitable drying out period before turning on the heating system (usually more than 14 days).

Note:
Remember, tiles CANNOT be lifted once the adhesive is dry without damaging the heating cable.

DO NOT store or cut tiles on top of the heating cable.

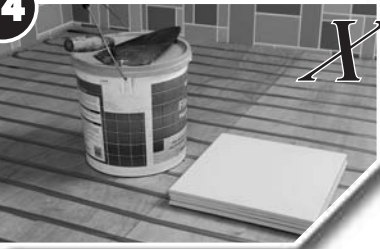
DO NOT contaminate the floor with dust or chippings during tiling.

13



Use sufficient adhesive to ensure no air gaps or voids are left under tiles

14



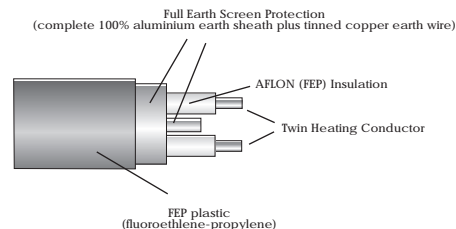
DO NOT store or cut tiles on the heating cable

Should you experience any problems with your ECOFLEX installation not warming your floor surface please carry out the following tests before calling the Flexel International Ltd technical support team.

STEP	TEST	OUTCOME	ACTION
1	Check for a 230V supply to the thermostat at terminals 1-5 (TH132 thermostat only)	230V	If no voltage present check supply
2	Set the thermostat to the highest position and test for a 230V output on terminals 3 and 4. This may take a few minutes	230V	Firstly, check the resistance of the floor probe (step 3). If the floor probe is normal the thermostat is faulty. Contact your supplier.
3	Turn off power to thermostat and test floor probe resistance	Approximately 8-12K Ω for temperatures 20-30°C	If probe is faulty, contact your supplier for a replacement
4	Turn off power to the thermostat and measure cable resistance	66-235 Ω depending on cable size (see cable label) *	If cable is faulty or has been damaged. Contact your supplier.
5	Turn off power to the thermostat and ensure there is no continuity between the conductors and the earth	No	If there is continuity between the conductor and screen, the cable has been damaged. Contact your supplier

* If multiple cables are installed then test each separately

CABLE CONSTRUCTION



- Approximate Installed Loading - 150W/m²
- Diameter - Less than 3mm
- 230V supply
- Twin conductor cable
- 1 x 3m cold tail connection lead

HEAT-UP TIMES

The speed of response of your ECOFLEX system depends on several factors including subfloor construction and tile material and thickness.

The table below provides indications of heat-up times for various sub-floor constructions.

Sub-floor Construction	Heat-Up Time (hrs)
ECOMAX insulated tile backer board (10mm) on timber	0.5
Concrete Screed Floor (Insulated under screed)	2-5
Un-Insulated Concrete	3-8+
Concrete with ECOMAX insulated tile backer board (10mm)	1



WHAT IS RADIANT HEAT

The Flexel radiant floor heating system installed in your home is one of the most efficient electric heating systems available today. The ECOFLEX system installed directly below your floor, gently warms the objects and people in the room. These surfaces include walls, windows, floors and ceilings. They then gently warm the surrounding air, creating a more natural warmth with minimal floor to ceiling temperature variation. This means that the air temperature can be lowered in the room whilst still maintaining comfort levels – this results in a reduction in heating bills over other conventional forms of electric heating systems.

This manual is provided to help you understand how your heating system works and how to operate it to achieve the maximum efficiency.

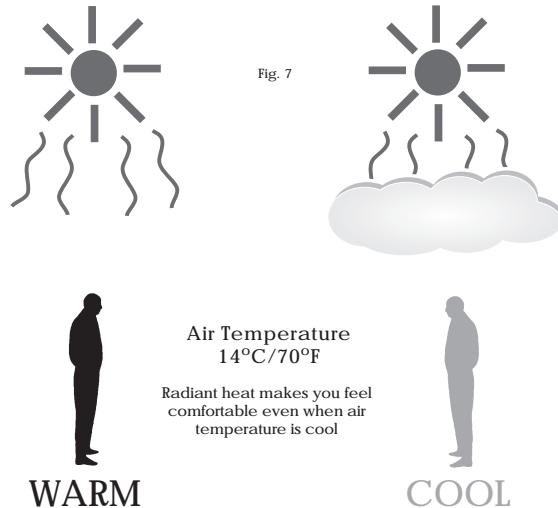


Fig. 7

The ECOFLEX underfloor heating system works just like the sun. The heating elements warm the floor surface which then emit energy in the form of infra-red heat. This is the same type of heat you feel when out on a sunny but cool spring day. Although the air temperature is cool the infra-red rays from the sun keep you warm.

An ECOFLEX radiant heating system is the most efficient form of heat distribution available. The radiant heat in the form of infra-red energy radiates throughout the room. The objects and occupants are heated first and then gently warm the surrounding air. As the body of air in the room is not overheated convection currents are not created. This means that dust is not circulated and drafts are not created. This brings higher levels of comfort, not only to allergy sufferers but to everyone in the room.

The ECOFLEX heating system is completely invisible/unobtrusive and allows more flexibility in creating the perfect living environment. It is reliable, safe and manufactured to last. Being electric with no moving parts it is completely maintenance free.

OPERATING MANUAL

Operation of your ECOFLEX heating system is similar to other conventional heating systems. Your method of control is via the wall mounted room thermostat. Set the thermostat to your desired temperature and the system will warm the room.

Following installation of your ECOFLEX heating system there are several precautions you should take on initial start-up of the heating system.

- 1) Do not be tempted to turn on the system immediately after laying the finished floor. Depending on the floor covering please allow time for the adhesive or leveling compound to cure completely (see manufacturers guidelines). Bring the system up to temperature gradually in stages over the next few days using the floor limit sensor temperature setting.
- 2) Each room installed with an ECOFLEX heating system will have its own thermostat. This means that you can individually set the room temperature based on the use of the room. If the room is rarely used, turn the thermostat down to a lower level to conserve energy.
- 3) Your ECOFLEX heating system is a direct acting system. However depending on the subfloor and the floor covering installed there may be a certain amount of thermal lag in the system (heat-up and cool down periods). Please anticipate these when switching your system on and off. Careful time clock control of on/off periods ensure maximum comfort at minimum cost.
- 4) Although your radiant heating system is less effected by air change/ventilation losses than a traditional convection heating system it is good practice to minimise drafts from open doors or windows as these can make occupants feel cold.
- 5) Set the thermostat to your desired comfort level and leave it. Setting the thermostat to a high temperature will not make the room get to temperature quicker. It will merely over heat the occupants once the set temperature is reached.
- 6) Thermostats are fitted with floor probes. The temperature of the actual floor can be varied to suit individual comfort levels. We recommend a maximum floor temperature setting of 28°C for optimum comfort conditions.

Be Aware

Although your ECOFLEX heating system requires no annual maintenance, care should be taken to ensure that the system is not damaged. Additional information for renovating and repairing is available in the system's installation manual.

- 1) Never pierce the floor. Piercing an electrically conductive cable with a nail or screw fixing can trigger the RCD unit and cut all power to the system.
- 2) Never cover any heated part of the floor with walls, solid or permanent floor fixed furniture. This could trap heat and potentially cause local overheating.
- 3) Thick rugs, dog beds, bean bags, exercise mats and items with high thermal insulation should not be laid on the heated floor as this may cause localised overheating.

Information for repair or renovation tradesmen

Please inform all repair or renovation tradesmen if they are working in the area of an installed ECOFLEX system. They should read the information contained within the installation and operating manual before commencing work. Failure to comply with this information may result in risk of electric shock.

ECOFLEX - The versatile electric underfloor heating

solution for all tile and stone floors

Installation is straight forward. However if you require assistance

call our dedicated technical team on 01592 760928



ECOFLEX INSTALLATION PLAN

To ensure the validity of your guarantee and the compliance to the 17th Edition wiring regulations (BS7671:2008) please provide a plan layout of your ECOFLEX underfloor heating installation. Flexel have provided an example opposite and a tick-box checklist to ensure this procedure is carried out correctly.

This sketch should be left next to the distribution board of the heating system together with the thermostat user instructions, guarantee certificate, original sales receipt and supplied sticker (see opposite) for the distribution board to alert users of the installation. A second sticker (see opposite) should be placed in the room with the heating system.

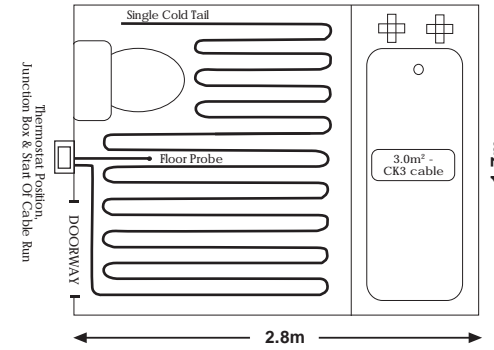


Part 1 - To be completed by the cable kit installer

What are the room dimensions?	<input type="text"/>	What is the heated area? <small>(kitchen, bathroom, conservatory etc)</small>	<input type="text"/>
What is the product code(s) of the ECOFLEX cable installed?	<input type="text"/>		
Have you marked the position of the junction box on the sketch?	<input type="checkbox"/>		
Have you marked the position of the thermostat on the sketch?	<input type="checkbox"/>		
Have you marked the position of the floor probe on the sketch?	<input type="checkbox"/>		
Have you marked the position of the heating cable runs?	<input type="checkbox"/>		

Part 2 - To be completed by the Electrician

What is the measured resistance of the installed ECOFLEX cables (Ohms)?			
Cable 1	<input type="text"/> Ω	Cable 2	<input type="text"/> Ω
		Cable 3	<input type="text"/> Ω
What is the total measured resistance of the cables connected in parallel (Ohms)?			<input type="text"/> Ω
What is the total power of the installation (W)?	<input type="text"/> W	What is the floor probe resistance?	<input type="text"/> Ω
What is the insulation resistance?	<input type="text"/> MΩ	What was the test voltage used (V)?	<input type="text"/> 500V
What is the RCD rating (mA)?	<input type="text"/> 30mA	What is the rated voltage (V)?	<input type="text"/> 230V



Please provide a detailed layout plan using the example to the left as a guide.

Take care to show the following:

- Product used
- Thermostat position (*Exterior wall if in a bathroom*)
- Low level junction box position
- Start and end of cable run
- Floor probe position
- Any fixed furniture/fittings
- Room dimensions

