iHelios LIVING REINVENTED

# Installation Instructions

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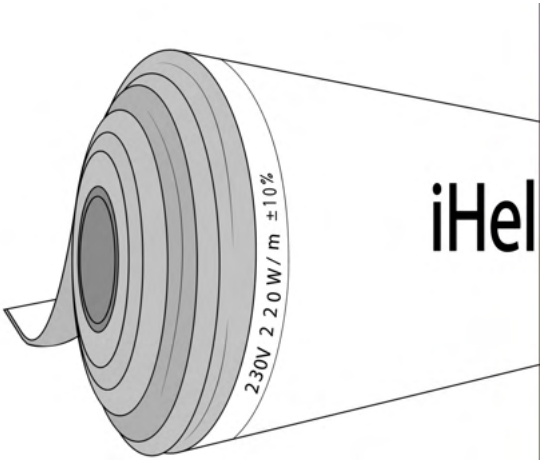
# iHelios Ceiling Heating Film iH403 (300mm) & iH405 (500mm)

Thank you for choosing iHelios for your home!

This manual has been thoughtfully designed to guide you through a secure and seamless installation process, offering solutions to any inquiries you may encounter along the journey.

# iHelios Heating Film



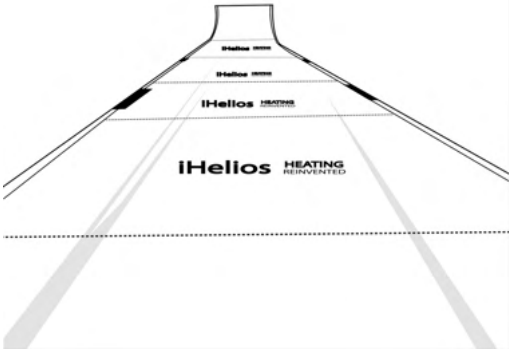

**iHelios Heating Film** turns electrical energy into far infrared waves that are emitted into space as heat. Infrared delivers an even heat with a sensation that people feel from the sun. It is scientifically known to be a very safe way of heating.

**iHelios Heating Film** is made up of the following parts:

- Carbon paste
- Copper
- PTC film (Positive Temperature Coefficient)
- Silver
- PET film (Polyethylene Terephthalate).

## TECHNICAL SPECIFICATION

- Current: 220-250V
- Heat resistance: 100 degrees Celsius
- Max current: 1A/sqm
- Max power: 220W/sqm
- Max temperature: 60 degrees Celsius
- Thickness: 0.4mm
- Width: 300mm / 500mm




## Features

- Emission-free *when backed up with solar panels*
- Far less energy use
- Less damp and mould
- 100% eco-friendly heat
- No maintenance
- PTC (Positive Temperature Coefficient film).

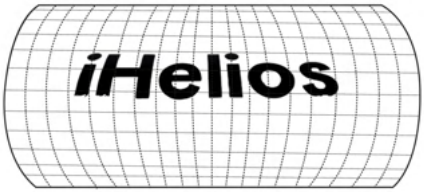
Compliances with Part L, 18th Edition Wiring Regulations.
The product conforms to UKCA and CE requirements.
The factory is accredited to ISO 14001 and 9001 standards.
Tested to BS EN 60335 96:2005 + A2:2009, BS EN 60335 96:2002 + A1:2004 + A2:2009, BS EN IEC 60335 96:2002 + A1:2003 + A2:2008, BS EN 60335-1:2012 + A11:2014-10 +A13:2017-11, BS EN 60335-1:2012 + A11:2014 + A13:2017, BS EN IEC 60335-1:2010

# Installation Materials

## - required for iHelios installation


**iHelios Heating Film**
**(300mm/500mm wide, 0.4mm thick)**

- An ultra-thin, flexible film designed to heat spaces using far-infrared waves
- Distributes heat evenly across its surface
- Suitable for floor heating applications




**iHelios Reflective Insulation**
**(1000mm wide, 5mm thick)**

- Insulation designed to reflect infrared heat into the room and provide a thermal barrier
- Waterproof, resistant to mold, and condensation

**Self-Amalgamating BUTYL tape**
**(50mm wide)**

- Strong adhesive**,** insulating and sealing electrical connections
- A protective barrier against moisture
- Durable at high temperatures

**Electrical Insulation Tape**
**(50mm wide)**

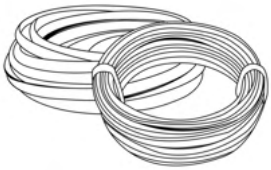
- A durable, flexible tape with a strong adhesive
- Serves as a protective barrier against electrical breakdown
- Used to secure the ends of the cut heating film.


**iHelios Joining Tape**
**(50mm wide)**

- Tape designed for joining strips of film and stabilizing the film's position onto a given surface.
- An incredibly flexible joining tape, resistant to high temperatures.

# Installation Materials

- required for iHelios installation

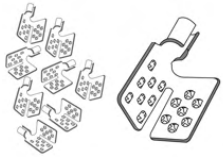


**1.5mm² Single Core Cable with Earth Blue/Grey + Brown/Grey**

- Electric wire with dual insulation for making electrical connections.

**iHelios Thermostat Probe Sensor**

- Measures temperature of the iHelios Film for precise heating control.

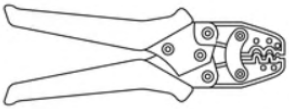


**Connectors**

- Connecting the electrical wires to the iHelios film.

**Blue Through Crimp Lugs**

- Designed for securing earth wires, ensuring safe electrical connections.



**iHelios Crimping Tool**

- Used to securely fasten electrical connections between wires and connectors in iHelios's film installation.


**iHelios Zigbee Thermostat iH210**

- Controls the temperature in each zone, according to personal preferences.
- Can be controlled and set up in our iHelios Living Reinvented App.

# Installation Tools

**Multimeter**
- to measure the resistance of the iHelios installation

**Calculator**
- to calculate power consumption

**Scissors**
- to cut the heating film

**Knife**
- to cut the reflective insulation

**Stripping pliers**
- to remove the outer covering of the electric wire

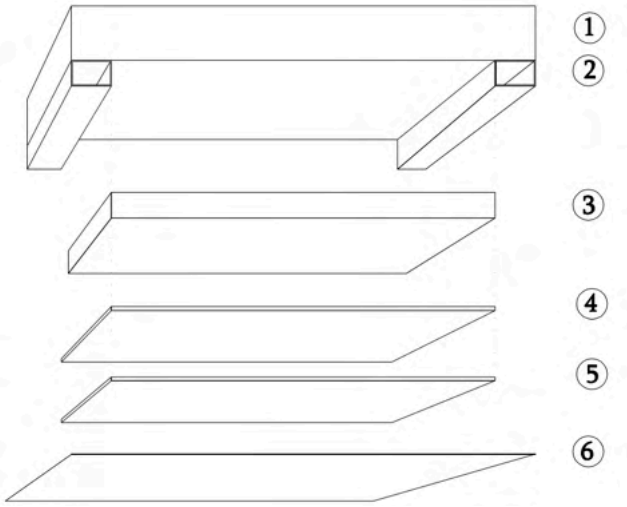
**Screwdriver**
- to install the thermostat

**Measuring tape**
- to measure the installation area

**Infrared Camera (not essential but useful)**
- to measure the temperature of the heating film

# iHelios In Your Ceilings

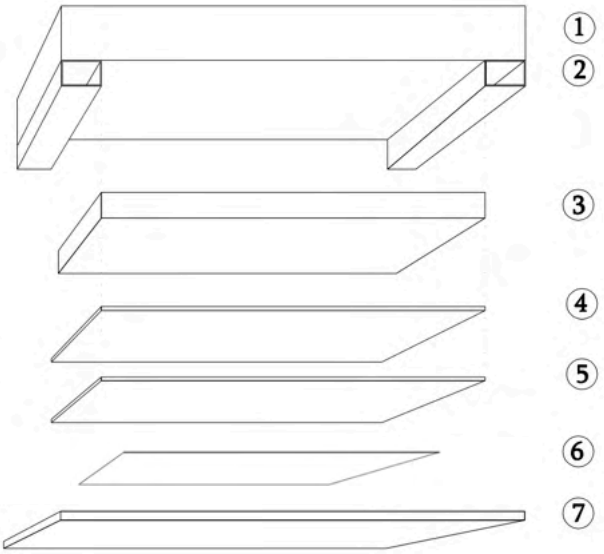
- **between joists/ battens**




1. Ceiling
2. Metal or wooden battens/existing joists
3. Mineral wool
4. iHelios Reflective Insulation
5. Helios Heating Film
6. Plasterboard

# iHelios In Your Ceilings

- **between two layers of plasterboards**




1. Ceiling
2. Metal or wooden battens/existing joists
3. Mineral wool
4. Plasterboard
5. iHelios Reflective Insulation
6. iHelios Heating Film
7. Plasterboard

# An Overview of the Installation Process

The outlined process provides an overview of the installation steps for the iHelios Heating System. Each stage of the installation process will be explored in more detail as this section progress.

1 **PLANNING**

- Prepare the designated location for the film.
- Calculate the required size and wattage.
- Select the appropriate thermostat and control system.

2 **PREPARATION**

- The electrician must prepare wiring for the main supply in each heating zone.
- Ensure the installation surface is accessible and the joists or battens are prepared.

3 **MEASURING AND PREPARING THE FILM**

- Measure, cut and secure the infrared film with the reflective insulation
- Follow the manufacturer's instructions carefully for cutting the heating film to the correct size and preparing the mats in the correct manner.

4 **POSITIONING THE FILM**

- Tape the prepared film strips in-between battens/joists, ensuring correct positioning without wrinkles, folds, or uneven areas.

5 **CONNECTING THE FILM**

- Run electrical cables from the mats to the thermostat.
- Connect the infrared mats to the thermostat.
- Follow the manufacturer's instructions for correct and safe connections.

6 **TESTING AND COMMISSIONING**

- Test the installed film to ensure proper functionality.
- Turn on the power supply and monitor the temperature to verify it reaches the desired level.

7 **COMPLETING THE INSTALLATION**

- Complete the installation by covering the ceilings with plasterboards.

**It's essential to emphasize the importance of reading and following the manufacturer's instructions throughout the entire installation process to ensure safety, proper functioning, and warranty compliance. Following these steps meticulously will contribute to a successful installation of the iHelios Heating System.**

# Planning

1. Once you have selected the appropriate width of heating film for your installation, you must measure, consider and draw the room layout and the possibility of placing iHelios Heating Film on the ceiling.
   - iHelios Film is designed to be positioned centrally between the joists or battens. The distance between the joists/battens needs to be relative to the width of the film. For example 300mm film will require a minimum of 310mm gaps in between the battens.
   - Exclude areas where permanent objects, such as floor-to-ceiling furniture, will be located. Also, omit any in-ceiling fixtures such as lighting, smoke detectors, and air conditioning.
   - Measure and sketch the room layout on the attached installation certificate, indicating the planned placement and length of the film. At this point, plan the placement of the thermostat. As the film is connected in parallel, you need to consider this when deciding the orientation to enable access to the connection point (usually the fused spur).
   - You should aim to provide an even coverage across all areas of the ceiling, avoiding any existing fixtures and fittings. You can cut the film at 250 mm strips so navigating around in ceiling items is very easy to achieve, as two lengths of film can be connected together to continue a run, provided the total length of the run does not exceed the maximum lengths as identified in the below table:

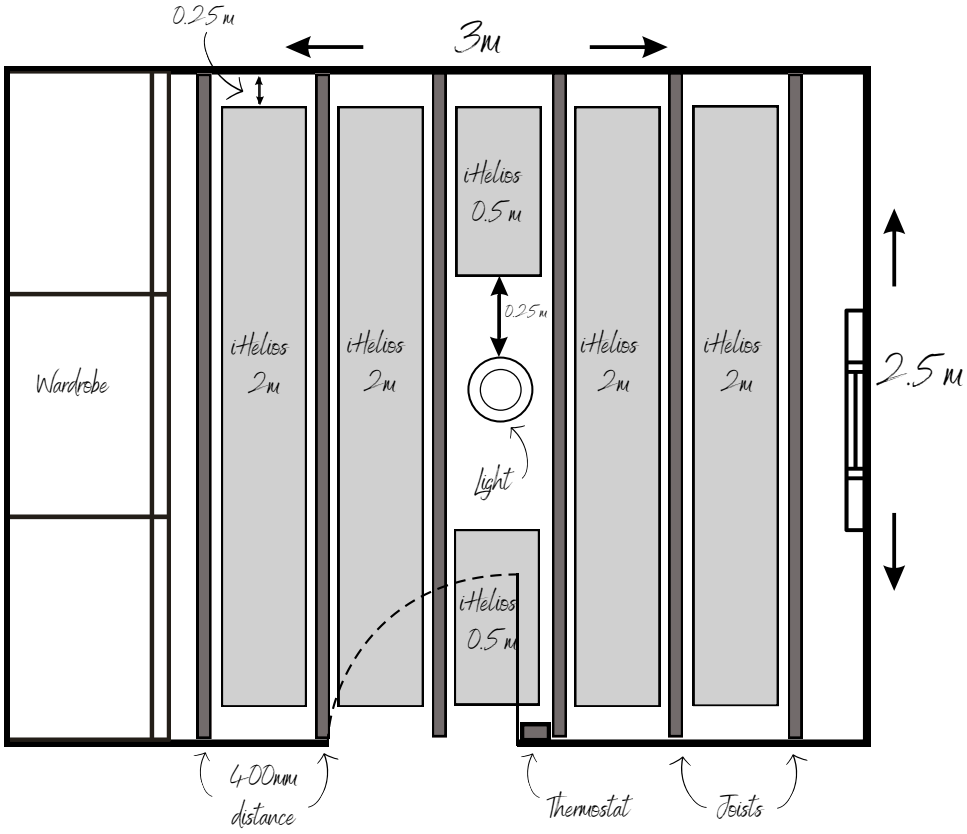
| Film Model | Film width (mm) | Power (W/m) | Power (W/sqm) | Voltage (V) | Max length of a single strip of heating film (m) | Max power of a single strip of heating film (W) |
|---|---|---|---|---|---|---|
| iH403 | 300mm | 66 | 220 | 230 | 18 | 1188 |
| iH405 | 500mm | 110 | 220 | 230 | 12 | 1320 |

**IHELIOS FILM PLACEMENT**

- iHelios Heating Film must be installed at least 250mm away from the perimeter wall and any fixtures or fittings like lights or detectors.
- Ensure that iHelios Heating Film is not placed above fixed objects such as fitted wardrobes.
- Layers of iHelios Heating Film cannot overlap in any way.
- To finalise the installation, all ceilings need to be plaster boarded. It is important to ensure that the plasterboard is not backed/coated with aluminium film as the heat would be reflected back.

**THERMOSTAT PLACEMENT**

- iHelios Thermostat should be placed on the interior wall, away from other heat sources or direct sunlight, and not in a drafty location.
- The thermostat should be mounted at a height that is convenient for easy access and temperature reading.




Bedroom layout 7.5 sqm

iHelios iH4-03 - 9 lm

**TIP**: Take a photograph of the room layout before covering for future reference.

# Electrical Preparation

2 All work must comply with current wiring regulations and installations must comply with Part P of the building regulations. Consult your local authority building control department regarding their requirements for certification or check with an electrician qualified to issue Part P certification regarding your individual installation. Therefore, it is important to ensure that electrical connections are made correctly and securely, using the equipment, materials and techniques we outline in the written instructions.

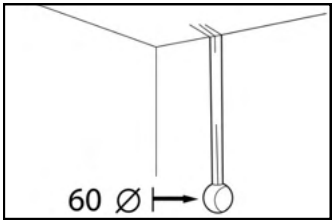
3 Calculate the heating power output and load of the planned installation in each room based on the Bedroom example from page 9 (iH403 - 300mm wide film):

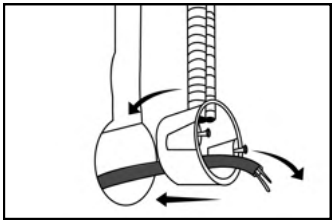
| iHelios film iH403 (m) | Heating output | Load |
|---|---|---|
| (4 x 2m strips) + (2 x 0.5m strips) = 9m | 9m x 66W = 594W | 594W/240V = 2.47 Amp |

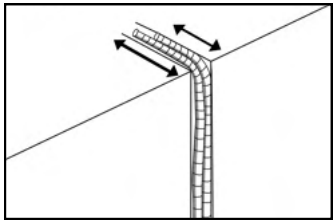
4 Examine the parameters of the electrical installation within the building to ensure that there will be no issues with concurrent usage of the heating film and other electrical devices or appliances. If the electrical connection's capacity is insufficient to support both the heating film and other devices safely, it must be upgraded to ensure proper operation.

5 Each room where the installation of the iHelios system is planned constitutes a separate heating zone, requiring its own electrical circuit. An electrician is required to install either a standard UK 13 Amp fused spur or a 20 Amp double pole switch for each thermostat, depending on the load; or a suitable circuit breaker.

6 Therefore, a 45mm back box for each thermostat must be fitted along with channels for three cables from the thermostat to the ceiling. To accomplish this, it is necessary to drill a hole for the electrical back box and carve out channels in the wall towards the ceiling to accommodate the conduits intended for the ceiling temperature sensor and the wires supplying power to the heating film.





## ELECTRICAL PROTECTION

- The main supply must be protected by a suitable Residual Current Device (RCD) to ensure safety.
- The thermostat should be connected to the power supply via a suitably rated circuit breaker for proper electrical protection.

## THERMOSTAT RATING AND LOAD MANAGEMENT

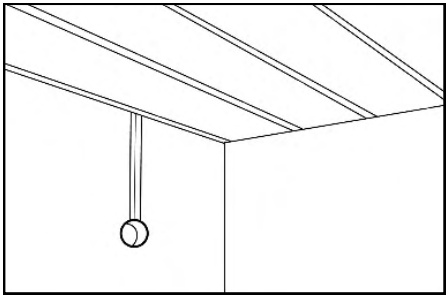
- iHelios thermostats are rated at 16 Amps. If the total loading from a combination of the heating film lengths exceeds this rating, there are two recommended options:
  * Zone the area and install a second thermostat with a suitably rated circuit breaker for each zone.
  * Install a suitably rated contactor that allows the heating system to be controlled through a single thermostat while managing the load effectively.

## THERMOSTAT PLACEMENT IN "WET" AREAS:

- If the thermostat is placed outside the room to be heated or inside a cupboard (common in shower rooms, bathrooms, and other 'wet' areas), the thermostat needs to be reprogrammed upon initial setup to only monitor the temperature probe placed in the heated room. Instructions for reprogramming can be found in the thermostat user manual.

# Surface Preparation

7 Before installing the iHelios system it is essential to prepare a ceiling surface. The system may be mounted between existing joists or may require the installation of metal or wooden frames/battens. The distance between the joists/battens needs to be relative to the width of the film. For example 300mm film will require a minimum of 310mm gaps in between the battens.



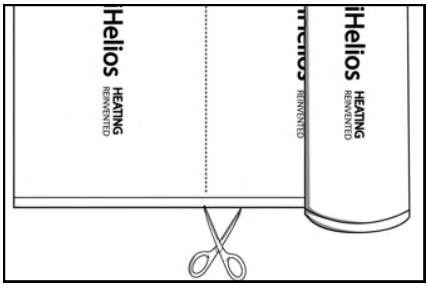
8 Before installing the film all electrical preparations must be accomplished. Thus the back box for the thermostat and wall-to-ceiling channelling must be prepared.

9 The ceiling must be accessible with no obstructions. Any loose cables from previous in-ceiling installations, must be secured with tie wraps or tape. The exact positions for lights and detectors should be marked. It is advisable to delay any finishing works until the iHelios installation is completed.

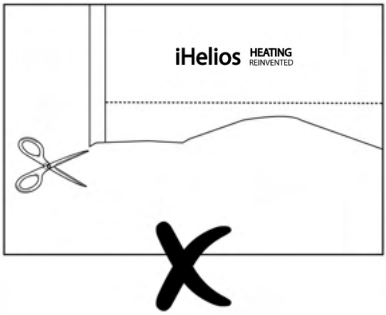
**TO ENSURE THE HIGHEST EFFICIENCY OF THE IHELIOS HEATING, IT IS CRUCIAL TO INSTALL WOOL INSULATION OR PIR TO SUPPORT THE SYSTEM.**

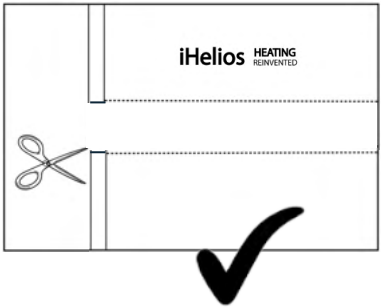
# Film preparation

10 Unroll the iHelios Film with the logo facing upward and cut strips at designated place, according to your sketch. The iHelios film features markings for cutting every 25 cm.

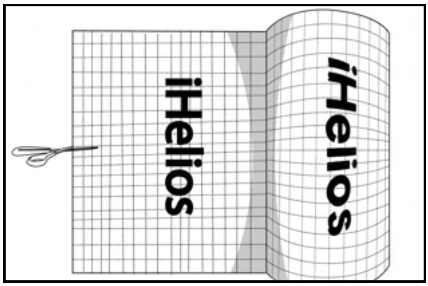



**The film can only be cut at designated locations. iHelios cannot be pierced, punctured, or cut at an angle. In such cases, the damaged piece of film should be cut off according to the instructions.**

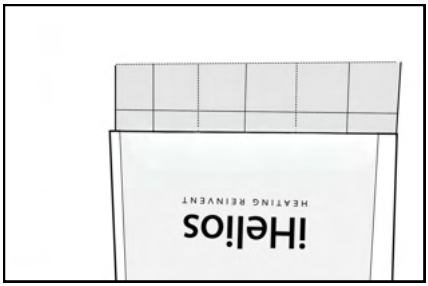


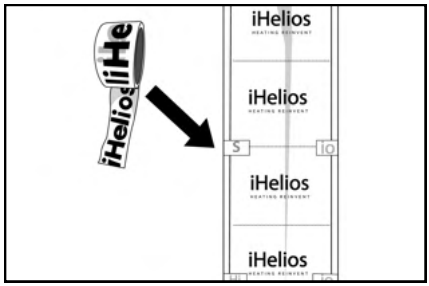




11 Unroll the iHelios Reflective Insulation and cut it to dimensions that match the cut strips of iHelios Film. ONLY iHelios Reflective Insulation is compatible with iHelios Heating Film. Using other insulation will invalidate your guarantee.



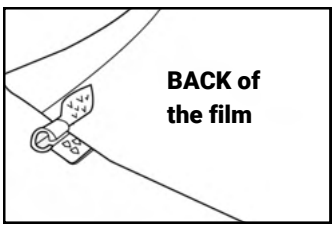
12 You must secure the iHelios Reflective Insulation strips to the iHelios Film strips using iHelios tape. Ensure both strips are facing upward.

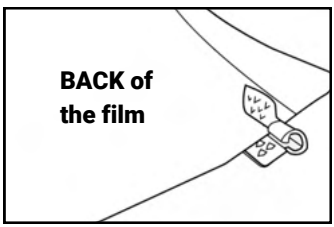


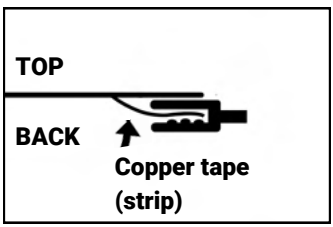




13 iHelios film strips are interconnected via 6241Y double-insulated cold tails. The cold tails are connected to the outlet box or directly into the thermostat that controls the heated room. For the crimping of connectors, iHelios connectors and iHelios crimping tool must be used exclusively or your guarantee will be invalid. Only insulation materials offered by iHelios must be used for the insulation of connectors and cut edges of the film.

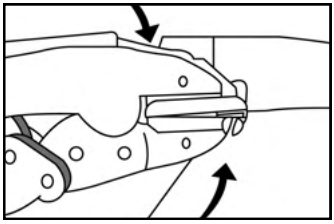

14 The next step is to fit the connectors into the film. Two connectors are placed into each film strip, attached to the side of the film located next to the wall where the thermostat is installed. The connector is placed beneath the copper strip. To do this, you need to apply gentle pressure to the end of the film separate the layers and expose copper tape. Insert the connector into the film in such a way that it closes towards the inner side of the film.

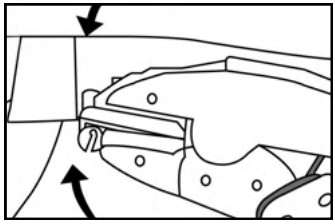


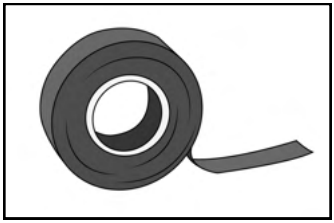



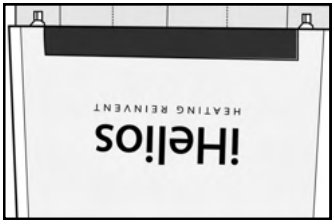
15 Take the crimping tool and crimp the connector first from the hinged side of the fastener and then from the open side to ensure that the connector is crimped firmly in place. The crimping tools ratchet prevents the opening of the jaws before the desired pressure is achieved.

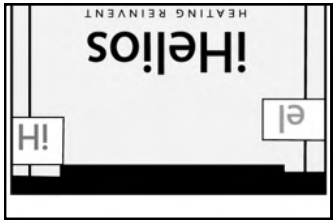




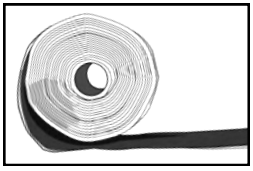
16 Once the connectors are in place, both ends of the film, between the copper strips should be secured with the electrical tape included in the kit.

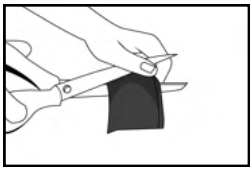


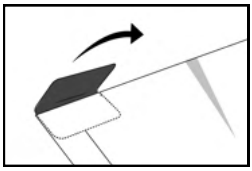


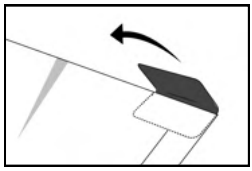




17 The copper tape elements on the side of the prepared film strip without the connectors need to be sealed with self-amalgamating tape.

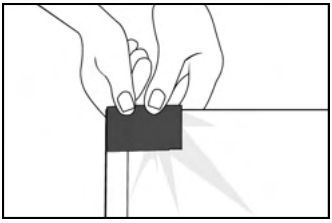


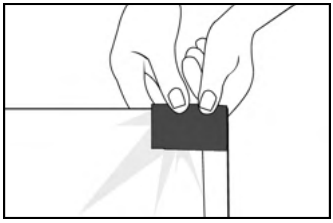






18 Press the tape onto the film and ensure it is firmly adhered.

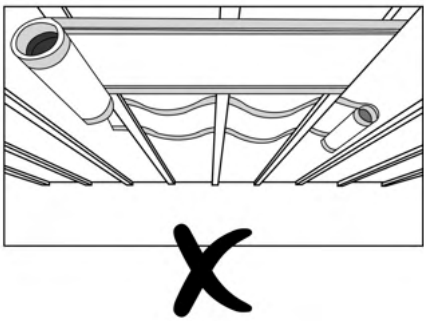


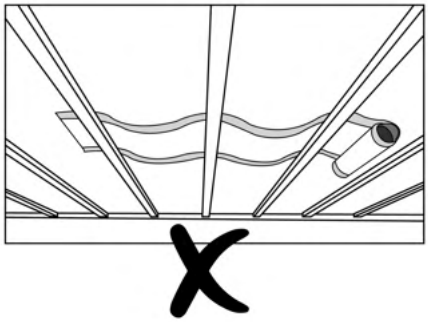


# Film positioning

19 Once each film strip is prepared according to the instructions, the next step is to position them between the battens or josist. This can be done using branded iHelios tape provided in the kit or a standard duck tape. The prepared film MUST be installed logo side facing down into the room.

- **iHelios Film can be positioned ONLY using a tape. It cannot be pierced, punctured, or cut at an angle. In such cases, the damaged piece of film should be cut off according to the instructions.**
- **Layers of iHelios Heating Film cannot overlap in any way.**
- **iHelios Heating Film must be installed at least 250mm away from the perimeter wall and any fixtures or fittings like lights or detectors.**
- **Ensure that iHelios Heating Film is not placed above fixed objects such as fitted wardrobes.**
- **The only correct way to install the prepared film on the ceiling is to adhere it BETWEEN the joists/battens. The film CANNOT be woven through the joists, NOR should it be attached directly to the joists.**

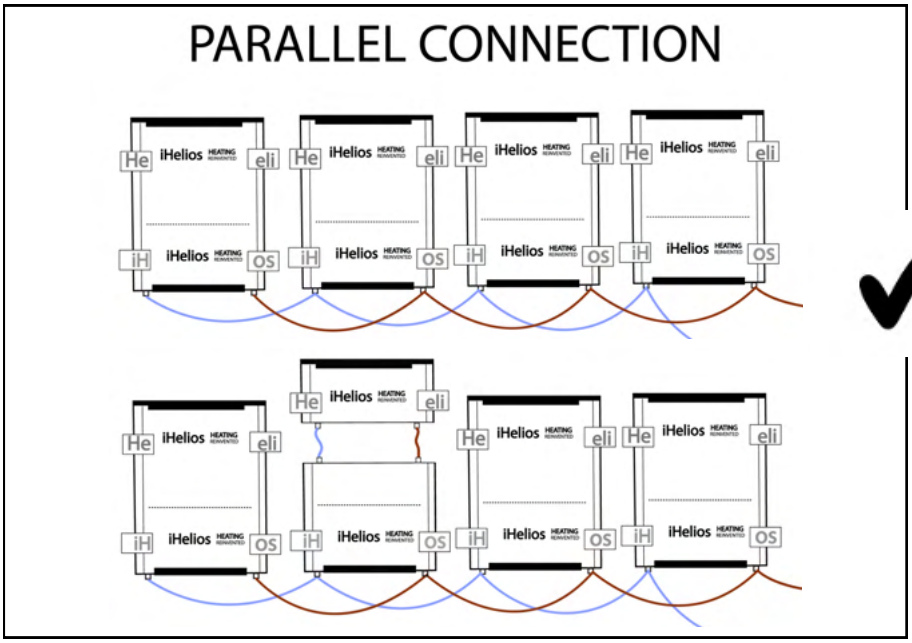





# Connecting the film

THE IHELIOS HEATING SYSTEM IS QUICK AND EASY TO INSTALL, THOUGH THE ELECTRICAL CONNECTION SHOULD BE DONE BY A FULLY QUALIFIED INSTALLER OR ELECTRICIAN.THE SYSTEM MUST BE TESTED AND APPROVED BY FULLY QUALIFIED ELECTRCIAN.

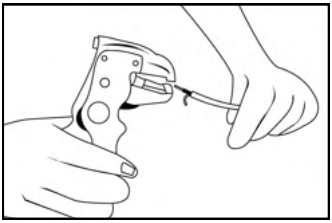
20 In the iHelios kit, you received two types of cables, one with a blue inner and the other with a brown inner. The film strips are connected in **PARALLEL** only; therefore, one side is live (brown cable), and the other is neutral (blue cable).

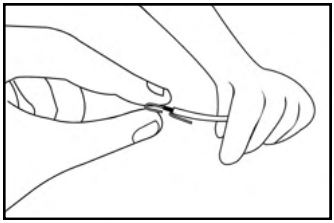



- **PERFORM ELECTRICAL CONNECTIONS WITH THE POWER TURNED OFF.**
- **ALL CONNECTIONS SHOULD BE MADE PRECISELY, CHECKING ITS TIGHTNESS AND CORRECTNESS AT EVERY STEP.**

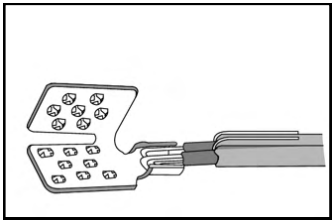
21 Run both cables through the prepared tunnel to the thermostat an cut to such a length that you can easily prepare the first connection. Now you can make the first cold tail connection. Strip the double insulation from both wires with pilers. Separate the earth wires.

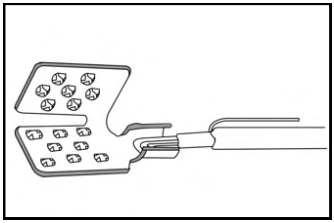
**THE WIRES CANNOT LIE DIRETLY ON THE BARE HEATING FILM.**



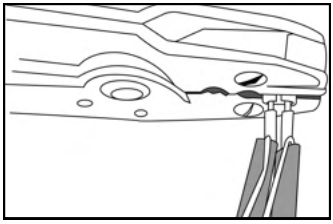


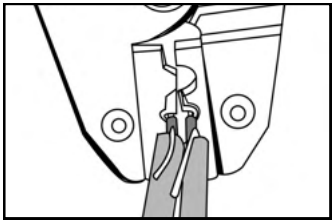
22 Now, bend the wires to create the cross-section. It must be at least 3mm2 because the connectors have been designed this way to enable 2 connecting conductors to be connected together. If one connecting conductor is required (the last section), it is necessary to bend the conductor into the connector in such a way that the required cross-section is achieved.

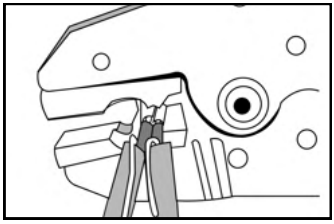




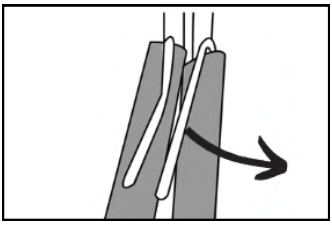
23 After placing the cross-section wires in the connector, they should be crimped using the crimping tool from 3 sides.

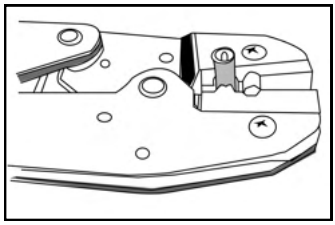




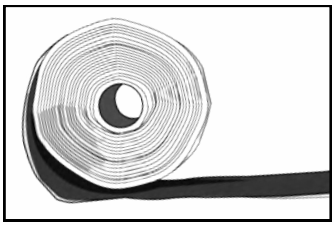
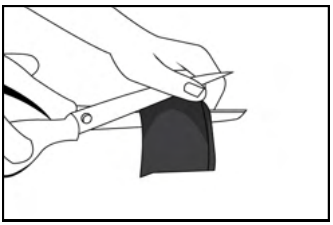
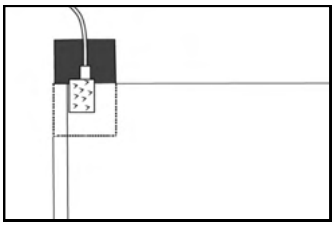
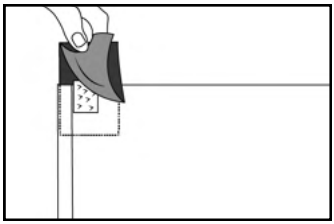
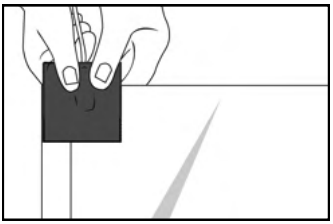
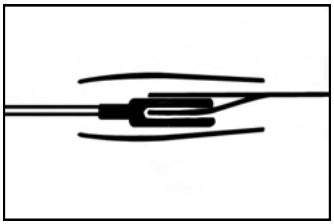


24 Secure the separated earth wires with blue Crimp Lugs. Tighten them using the the crimping tool. Finally, ensure that all the connections are securely crimped and solid. Continue connecting the cables while adhering to the parallel wiring diagram.

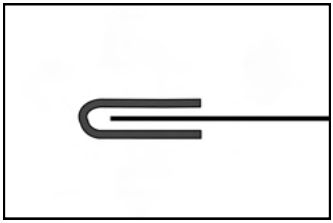


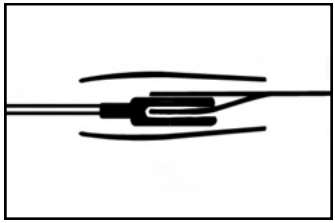


25 After creating the connections, you should secure them with the self-amalgamating tape provided in the kit. Cut the tape into 5cm pieces. Remove the protective layer, place them centrally over the connection to ensure a minimum overlap of 11mm from the live parts and press the sticky sides firmly together. This will seal your connection and provide a moisture proof barrier.

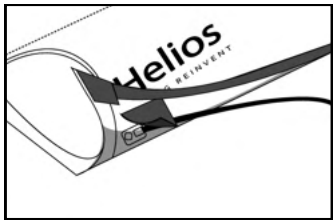







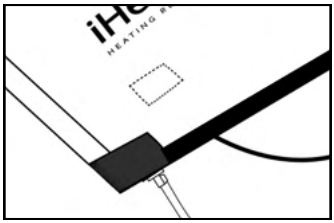
**Properly sealed connector and copper end.**





26 The next step is to position the sensor probe. Run the sensor cable through the conduit, move aside the strip of film located next to the prepared conduit. Then, and tape the sensor to the rear part of the film. Make sure that the sensor is not positioned on the copper tape (strip).



# Testing and commissioning the iHelios Heating installation

27 It's important to test and commission the final installation. To do this you can calculate the total power input of the installed heating film. Where the power demand of the installed heating film is greater than the current carrying capacity of the existing connection, the size of the existing connection must be increased.

## POWER OF THE INSTALLATION

**P(W) = Pf(W) x Df(m2)**

**P** - Planned power of the heating film installation
**Pf(W)** - Power consumption of heating film per m2
**Df** - Surface field of installed heating film on the floor.

**Example** from the 9th page

- 9 metres of iH403 film were installed
- iHelios iH403 - 66W/m

Measure the installed length of the iHelios Film (m) and multiply (x) by the length output:

(W/m): P = 9 m × 66 W/m = 594 W

Calculate tolerance: the lower is –10% = 535 W and the upper is +10% = 653 W;

## RESISTANCE OF THE INSTALLATION

The resistance of 1m length of 300mm wide film is 833.33Ω (+/-10%)

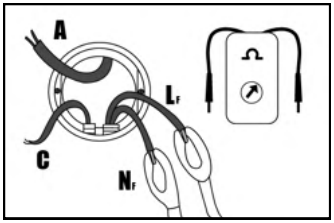
Divide the nominal resistance(Ω) by the measured length of the heating film:

R = 833.33Ω/ 9 m = 92.59Ω;

Please note that the total resistance decreases with increasing length.

Calculate the tolerance: the lower one is - 10% = 83.33 Ω and the upper one is +10% = 101.85 Ω;

28 Measure the resistance of the heating film with multimeter:
- in this example the measured resistance is 97.03Ω for 9m of iH403 film




Use the below formula to check the tolerance:

**P= U x U/ R**

P - output (W)
U - voltage (V) (The mains voltage is 240 V)
R - resistance (Ω)

As per above example = 240x240 / 92.03Ω = 625 W;
(tolerance -/+10%)

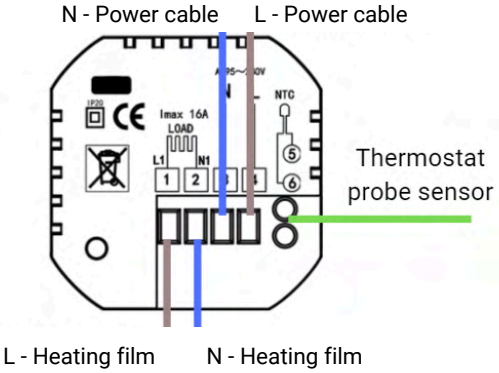
As the planned power of the installation was 594W, the value of electric resistance is within tolerance and is therefore satisfactory.

**IF THE MEASURED RESISTANCE AND POWER CALCULATIONS ARE NOT WITHIN THE TOLERANCE LIMITS (+/-10%) COMPARED TO THE INITIAL READING, THE HEATING FILM INSTALLATION HAS BEEN CARRIED OUT INCORRECTLY AND CANNOT BE OPERATIONAL. RECHECK THE ENTIRE INSTALLATION!**

29 Complete the 1st Fix Installation Certificate with the resistance measurements.

- **THE RESISTANCE NEEDS TO BE MEASURED AND CHECKED BEFORE AND AFTER PLASTERBOARD INSTALLATION.**
- **THE MEASUREMENTS MUST BE RECORDED IN THE 1ST & 2ND FIX CERTIFICATE TO QUALIFY FOR THE GUARANTEE.**

30 If the resistance is within the normal range, the heating film installation must be tested by connecting to the main supply according to the diagram below:




**BEFORE ACTIVATING THE MAIN POWER SUPPLY, ENSURE THAT ALL WIRES ARE CORRECTLY CONNECTED!**

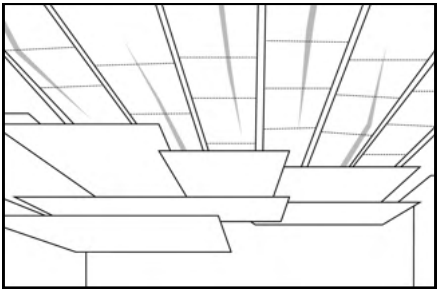
31 After the system is on, it is necessary to check if all heating film strips are warming up. You can do this by touching the film or by using an infrared camera.

32 Once tested and approved it necessary to disconnect the power supply before further works.

**IF THE HEATING FILM DOES NOT HEAT UP, DISCONNECT THE POWER SUPPLY AND CHECK CAREFULLY ALL ELECTRICAL CONNECTIONS!**

# Completing the installation

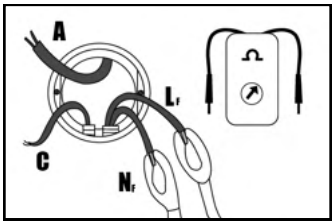
33 Once the iHelios installation has been tested and operates correctly the ceilings are ready to be covered with plasterboards. It is important to always check and ensure that the plasterboard is suitable for use with infrared heating systems.



- **NOTE THAT IHELIOS HEATING FILM IS ONLY COMPATIBLE WITH STANDARD PLASTERBOARD.**
- **THE PLASTERBOARD CANNOT BE BACKED/ COATED WITH ALUMINIUM FILM.**
- **THE TERMAL RESISTANCE OF THE PLASTERBOARD MUST NOT EXCEED 0.15M2 K/W.**
- **A CARE MUST BE TAKEN NOT TO PIERCE, PUNCTURE OR CUT THE HEATING FILM WHEN INSTALLING PLASTERBOARDS**
- **DO NOT LEAVE ANY SECTIONS OF THE HEATING FILM OR CONNECTIONS UNCOVERED.**

# Completing the installation

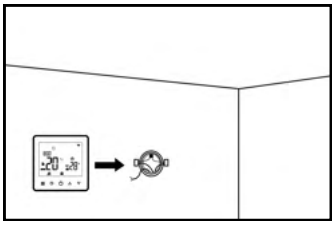
35 After installing plasterboards, it is important to measure the resistance again.




- **IF THE MEASURED RESISTANCE AND POWER CALCULATIONS ARE NOT WITHIN THE TOLERANCE LIMITS (+/-10%), DAMAGE MAY HAVE OCCURRED TO ANY OF THE INSTALLATION COMPONENTS.**
- **TO IDENTIFY WHICH HEATING FILM STRIP HAS BEEN DAMAGED, IT IS EASIEST TO USE AN INFRARED CAMERA.**

36 Once all measurements are within the tolerance, complete the 2nd Fix Installation Certificate with the resistance measurements.

37 Install the thermostat according to the manufacturer's attached instructions. After the thermostat has been installed properly, verify the heating system's functionality.



**Thank you for following our instructions.**
**We wish you many warm years with iHelios!**

# iHelios Guarantee Guidelines

iHelios Living Reinvented Limited provides limited guarantee to the original purchaser of the iHelios Heating System subject to the terms and conditions outlined below.

1. iHelios offers the following guarantee periods:
- Heating Film: The standard guarantee period is 2 years from the purchase date, extendable to 20 years with appropriate documentation.
- Thermostat: 2 years from the installation date.
- Smart Devices: 1 year from the installation date.

2 The extended guarantee is automatically valid from the date of installation ONLY with a copy of the purchase confirmation i.e. receipt or invoice, installation plan for each room and a copy of the Installation Certificate signed by an iHelios Approved Installer (included in these terms as an appendix).

3. The iHelios Guarantee is only valid when all components of the system are iHelios products. The use of any other sub-products or components not approved by iHelios voids the guarantee. The iHelios Guarantee does not cover:
- Damage caused by improper installation or improper use of the system.
- Damage caused by unauthorized modification or repair.
- Damage caused by external factors such as fire, flood, lightning, power surges, or acts of
- nature.
- Consumable components, such as fuses or batteries.
- Any system that has been tampered with or had its serial number altered or removed.

4. In the event of a guarantee claim, the Customer must:
- Contact iHelios Customer Support via email support@ihelios.co.uk to report the issue.
- Provide the Guarantee Certificate with the required documents.
- Follow the instructions provided by iHelios Team for troubleshooting or repair.

5. If a defect is confirmed and falls within the guarantee coverage, iHelios will, at its discretion, repair or replace the defective system or components.

6. iHelios' liability under this guarantee is limited solely to the repair or replacement of the System or components as provided in these terms and conditions. iHelios shall not be liable for any consequential or incidental damages arising from the use of the System.

# Documentation & record-keeping

Documentation and record-keeping are essential in any electrical installation. Reasons include:

**1. Compliance with regulations**
Electrical installations must comply with various regulations, codes, and standards. Documentation helps demonstrate that the installation has been designed, installed, and tested in compliance with these requirements.

**2. Maintenance and troubleshooting**
Electrical systems require regular maintenance and occasional troubleshooting. Documentation provides information about the system's components, layout, and operation, making it easier to diagnose and repair.

**3. Safety**
Electrical installations can be dangerous if not installed or maintained correctly. Documentation helps ensure that the system is designed and installed safely and that maintenance and repair work is carried out in a safe manner.

**4. Liability**
If an electrical installation causes damage or injury, documentation can be used to demonstrate that the installation was designed and installed correctly, and that maintenance and repair work was carried out in accordance with industry standards.

**5. Future modifications**
Electrical installations may require modifications or upgrades over time. Documentation provides a record of the installation's original design and construction, making it easier to plan and execute modifications or upgrades.

# IHELIOS INSTALLATION PLAN

Address: .....

Room: .....

Ceiling ☐ Underfloor ☐ Film type: iH403 ☐ iH405 ☐ iH410 ☐

How much heating film was installed? .....m² Resistance measured:.....

* Make a copy for each room

# IHELIOS INSTALLATION PLAN

Address: .....

Room: .....

Ceiling ☐ Underfloor ☐ Film type: iH403 ☐ iH405 ☐ iH410 ☐

How much heating film was installed? .....m² Resistance measured:.....

* Make a copy for each room

# INSTALLATION CERTIFICATE - 1ST FIX

All installations must be completed and tested by a fully qualified electrician or a competent person as stated in the IET wiring regulations BS7671:2018
*Must completed by the iHelios Approved Installer

Date: .....

**Resistance Testing**

1. Each thermostat zone must be resistance-tested individually.
2. Measure the overall resistance for the iHelios Heating System and note the measured resistance for the number of rooms at the project.

System Resistance (Ohm):

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

How many linear meters are installed?

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

*Please take a picture of the iHelios Heating Film in each of the rooms before it is covered*

Customer's signature: .....

iHelios Approved Installer's name & signature: .....

# INSTALLATION CERTIFICATE - 2nd FIX

To ensure the validity of your warranty and compliance with the 18th Edition Wiring Regulations (BS7671:2018) please provide a plan layout of the iHelios Heating System. This sketch should be left next to the consumer unit of the heating system together with the thermostat user manual, warranty, and a supplied sticker should be placed on the fuse box where the iHelios Heating System was installed.

**Part 1**

*To be completed by the installer*

Address of the project: .....

Client's name: .....

Client's contact number: .....

Client's email: .....

What is the total area of the property (m2)? .....

What is the total heated area of the property (m2)? .....

Model of the thermostat - How many thermostats? .....

Total heat requirement (Watts)? .....

Total load requirement (Amps)? .....

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

Have you marked the position of the thermostat on the sketch? YES / NO

Have you marked the position of the temperature probe on the sketch? Is Wi-Fi available ? YES / NO

If yes, have all of the thermostats been connected to the iHelios Living Reinvented App? YES /NO

Have all of the thermostats been calibrated? YES / NO

Has there been sensors set up to all of the thermostats? YES / NO

Has the temperature limit been setup to all of the thermostats? YES /NO

**Part 2**

***To be completed by the installer***

What is the total rated voltage (V)? .....

What is the measured resistance of the iHelios Heating System (Ohms)?

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

Installer's name & signature: ..... Customer's signature: .....

# YOUR iHELIOS HEATING SYSTEM GUARANTEE CERTIFICATE

Thank you for choosing **iHelios**.

Welcome to the future of space heating technology, where your comfort is secured with a TWENTY-year guarantee!

This certificate serves as proof of your iHelios Heating System installation and is required in the event of any guarantee claims. Please ensure all details are filled in accurately and that the necessary documents are attached. Your guarantee is valid only when all the required information and installation certificates are completed in accordance with the terms of our guarantee policy*.

Purchase Date: .....

Invoice/Ref Number: .....

Heating film type: .....

Thermostat type: .....

Customer's name: .....

iHelios Approved Installer's name: .....

Address of the installation: .....

Date of installation: .....

Invoice/Receipt attached ☐

Installation Certificate attached ☐

iHelios installation Plans (for each room) attached ☐

* See our terms and conditions document for full guarantee details.

iHelios Living Reinvented Ltd
The Old Brass Foundry
Marlborough Terrace Hull,
HU2 9AE

01482 699314
info@ihelios.co.uk
**iHelios.co.uk**

# Terms & Conditions of iHelios Guarantee

**Basic information**

1. This guarantee is provided by iHelios Living Reinvented Ltd (The Old Brass Foundry, Marlborough Terrace, HU2 9AE), hereinafter referred to as the "Guarantor" or “iHelios”.
2. The guarantee outlines the obligations and rights of both the Buyer and the Guarantor regarding the iHelios Heating System.
3. The guarantee is only valid when issued in accordance with the terms provided herein. Any statement about the guarantee in another document not connected to this one does not establish a guarantee relationship.
4. This guarantee covers hidden defects in the materials or workmanship of the product that prevent its intended use.
5. The guarantee is assigned to the property at the installation address.
6. The iHelios standard guarantees cover:

- iHelios Heating Film: 2 years, extendable to 20 years with appropriate documentation.
- Thermostat: 2 years from the purchase date.
- Smart Devices: 1 year from the purchase date.

**Conditions of the guarantee**

1. The guarantee is valid provided that the heating system has been installed according to the manufacturer’s instructions outlined in the installation manual.
2. The guarantee expires if:

- There is unauthorized interference with the system by the customer or a third party, including independent repairs or modifications.
- There is the use of sub-products or components not approved by iHelios

3. The guarantee does not cover:

- Damage caused by improper installation or improper use of the system.
- Damage caused by unauthorized modification or repair.
- Damage caused by external factors such as fire, flood, lightning, power surges, or acts of nature.
- Consumable components, such as fuses or batteries.
- Any component or product that has been tampered with or had its serial number altered or removed.

**Guarantee extension**

1. The guarantee period may be automatically extended to 20 years, provided that the following conditions are met:

- Installation must adhere to all guidelines outlined in the installation manual.
- Installation documents, including the Installation Certificate, Installation Plan for each room must be correctly completed and signed by an Approved Installer. (List of approved installers available on our website)
- The customer must provide proof of purchase (i.e., receipt or invoice).
- The customer must complete the Guarantee Certificate Form.

2. It is the Customer's responsibility to retain all necessary documentation listed in the 1st point and provide them in case of a guarantee claim. Failure to present the required documents will result in the rejection of the claim.

**Customer’s Responsibilities in Case of Defects**

1. In the event a defect is discovered, the Customer is obliged to immediately take measures to prevent further damage or additional losses, including ceasing use of the product.

**Guarantee claim**

1. A Customer intending to exercise the right under the guarantee is obliged to present the original, correctly completed documents, including:

- Installation documents, including the Installation Certificate, and Installation Plan for each room.
- Proof of purchase (i.e., receipt or invoice).
- The completed Guarantee Certificate Form.

2. In the event of a claim based on the extended guarantee, failure to present the required documents will result in the rejection of the claim.
3. A Customer intending to exercise their right under the guarantee must promptly inform the Guarantor in writing about any defects or faults in the product or service provided by iHelios. The Guarantor recognizes only those defects or faults indicated in the written content of the Buyer's claim, supported by photographic evidence when applicable.
4. The Customer is obligated to submit the claim along with written details and photo evidence to support@ihelios.co.uk to facilitate a thorough assessment by the Guarantor.
5. The Buyer must report to iHelios Living Reinvented Ltd that sold the goods or services.
6. Within 14 days of the notification, the Guarantor is obliged to check the validity of the Buyer's notification. A guarantee claim verification report is prepared from the inspection activities.
7. If the claim is justified, the Guarantor shall perform the repair as soon as possible, individually agreed with the Guarantor holder, upon agreement of the parties.
8. Repairs under the guarantee may be made only by entities authorized by the Guarantor.
9. After the guarantee repair has been performed, the card must contain:

- Information about the repair
- Information about the scope of repair
- Details of the person performing the repair, including a personal stamp and signature.
- Date and numbers of issue of the certificate to the entity performing the repair.

**Guarantee Repair or Replacement**

1. Under the guarantee, the Guarantor is responsible for either repairing the product or replacing it with a defect-free one, at their discretion. The Guarantor will inform the Buyer of the selected remedy or, if applicable, the rejection of the guarantee claim.
2. The Buyer exercising their rights under the guarantee is required to deliver the product to the Guarantor's office unless the Guarantor agrees to perform the replacement or repair at another location (e.g., at the site of the product). After completing the guarantee obligations, the Guarantor will notify the Buyer of the repair and return the product at their own expense to the place from which they received it from the Buyer.
3. If the claim is justified, iHelios will reimburse the Buyer for the delivery cost to the Guarantor's office, up to the value of the lowest available shipping cost.
4. In cases of an unjustified claim, the Buyer will bear the cost of returning the product, based on iHelios's pricing, or the cost of iHelios technicians traveling to inspect the product, including the service fee (determined by iHelios's hourly rates).
5. If iHelios is not responsible for the defect, the Buyer may commission iHelios to perform a paid service, which will be priced based on the time taken for the repair and the hourly rate of iHelios employees.

**Guarantee Duration Extension**

1. If the Guarantor provides a replacement product free from defects or conducts a significant repair of the product covered by this guarantee, the guarantee period is extended by the time between reporting the defect to the Guarantor and its resolution or the delivery of a defect-free product.

**Limitation of the Guarantor's liability**

1. The total amount of all Buyer's allowance for which the Guarantor is responsible during the guarantee period is the equivalent of the net price of the product sold, specified in the sales document.
2. The total amount of the Buyer's allowance for which the Guarantor is responsible in the case of a single repair is the equivalent of the net price of the defective product or its component part, if it is possible to quantify according to the value at the time of notification of the defect; however, it may not exceed the amount determined in accordance with the first point.
3. The Guarantor's liability does not cover product defects and faults if:

- The product has been installed contrary to its intended use, or was not selected, installed, or used in appropriate conditions according to the product's installation and operating instructions.
- The product has been damaged as a result of mechanical factors or other external influences, such as thermal or chemical factors, flooding, moisture exposure, excessive dirt accumulation, or faulty operation of other installations (e.g., electrical) or devices impacting the product's performance.
- The product has been damaged due to random events or acts of force majeure, such as fire, flooding, lightning, or similar unforeseen events.
- The product has been used in conjunction with non-original or incompatible accessories or components not recommended by the manufacturer.
- The transport, unloading, storage, cleaning, or maintenance of the product was not performed according to the instructions provided in the product's User Manual.
- In cases where the extended guarantee is claimed, the heating film installation must have been carried out by an installer authorized and certified by iHelios (a list of certified installers is available on the iHelios website).
- The electrical installation to which the product is connected had incorrect voltage or lacked proper over-current and differential-current protection.
- Independent modifications or alterations were made to the electrical installation by the user or unauthorized persons.
- Renovation works carried out after the product's installation did not comply with the assumptions in the as-built design or were performed contrary to construction law.

4. The guarantee covers the Guarantor's product exclusively purchased in the UK.
5. Provided these products are installed in a location in the UK moving the installed products outside the UK results in the expiry of the guarantee rights.
6. Relocating the heating system to any other location invalidates the guarantee, as it is assigned to the installation address due to the product adaptation to the specific building.

iHelios LIVING REINVENTED

iHelios LIVING REINVENTED

# Installation Instructions

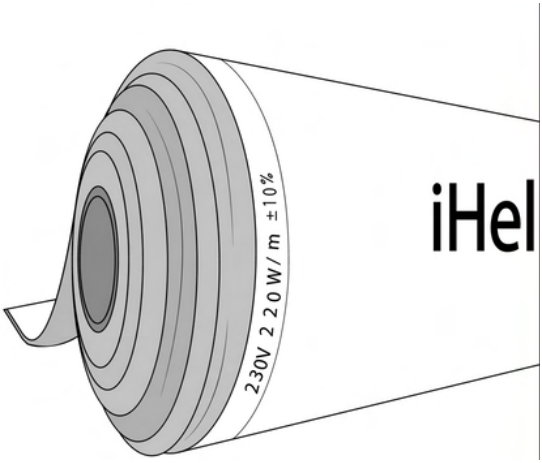
-

# iHelios Underfloor Heating Film iH410 (& iH403, iH405)

Thank you for choosing iHelios for your home!

This manual has been thoughtfully designed to guide you through a secure and seamless installation process, offering solutions to any inquiries you may encounter along the journey.

# iHelios Heating Film



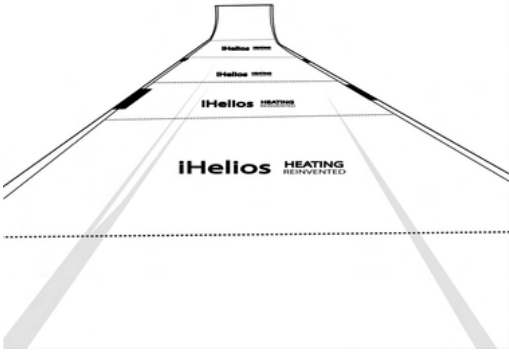

**iHelios Heating Film** turns electrical energy into far infrared waves that are emitted into space as heat. Infrared delivers an even heat with a sensation that people feel from the sun. It is scientifically known to be a very safe way of heating.

**iHelios Heating Film** is made up of the following parts:

- Carbon paste
- Copper
- PTC film (Positive Temperature Coefficient)
- Silver
- PET film (Polyethylene Terephthalate).

## TECHNICAL SPECIFICATION

- Current: 220-250V
- Heat resistance: 100 degrees Celsius
- Max current: 1A/sqm
- Max power: 220W/sqm
- Max temperature: 55 degrees Celsius
- Thickness: 0.4mm
- Width: 1000mm




## Features

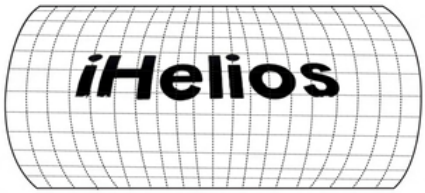
- Emission-free *when backed up with solar panels*
- Far less energy use
- Less damp and mould
- 100% eco-friendly heat
- No maintenance
- PTC (Positive Temperature Coefficient film).

Compliances with Part L, 18th Edition Wiring Regulations.
The product conforms to UKCA and CE requirements.
The factory is accredited to ISO 14001 and 9001 standards.
Tested to BS EN 60335 96:2005 + A2:2009, BS EN 60335 96:2002 + A1:2004 + A2:2009, BS EN IEC 60335 96:2002 + A1:2003 + A2:2008, BS EN 60335-1:2012 + A11:2014-10 +A13:2017-11, BS EN 60335-1:2012 + A11:2014 + A13:2017, BS EN IEC 60335-1:2010

# Installation Materials Required

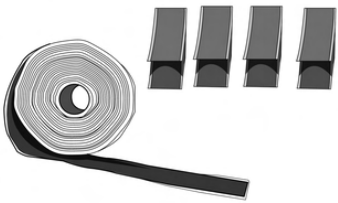

**iHelios Heating Film**
**(1000mm wide, 0.4 mm thick)**

- An ultra-thin, flexible film designed to heat spaces using far-infrared waves
- Distributes heat evenly across its surface
- Suitable for floor heating applications




**iHelios Reflective Insulation**
**(1000mm wide, 5mm thick)**

- Insulation designed to reflect infrared heat into the room and provide a thermal barrier
- Waterproof, resistant to mold, and condensation

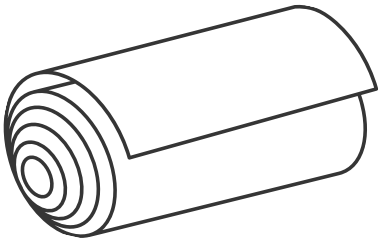


**Self-Amalgamating BUTYL tape**
**(50mm wide)**

- Strong adhesive**,** insulating and sealing electrical connections
- A protective barrier against moisture
- Durable at high temperatures

**Electrical Insulation Tape**
**(50mm wide)**

- A durable, flexible tape with a strong adhesive
- Serves as a protective barrier against electrical breakdown
- Used to secure the ends of the cut heating film.



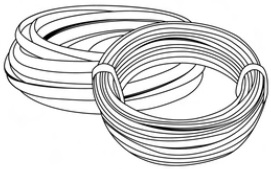
**Polythene Protective Membrane**
**(minimum 300GA)**

- Vapour barrier to protect the floor and heating film against moisture

# Installation Materials Required


**iHelios Joining Tape**
**(50mm wide)**

- Tape designed for joining strips of film and stabilizing the film's position onto a given surface.
- An incredibly flexible joining tape, resistant to high temperatures.

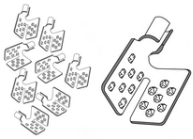


**1.5mm² Single Core Cable with Earth**
**Blue/Grey + Brown/Grey**

- Electric wire with dual insulation for making electrical connections.

**iHelios Thermostat Probe Sensor**

- Measures temperature of the iHelios Film for precise heating control.

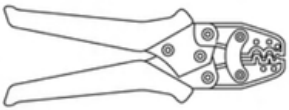


**Connectors**

- Connecting the electrical wires to the iHelios film.

**Blue Through Crimp Lugs**

- Designed for securing earth wires, ensuring safe electrical connections.



**iHelios Crimping Tool**

- Used to securely fasten electrical connections between wires and connectors in iHelios's film installation.


**iHelios Thermostat**

- Controls the temperature in each zone, according to personal preferences.
- Can be controlled and set up in our iHelios Living Reinvented App.

# Installation Tools

**Multimeter**
- to measure the resistance of the iHelios installation

**Calculator**
- to calculate power consumption

**Scissors**
- to cut the heating film

**Knife**
- to cut the reflective insulation

**Stripping pliers**
- to remove the outer covering of the electric wire

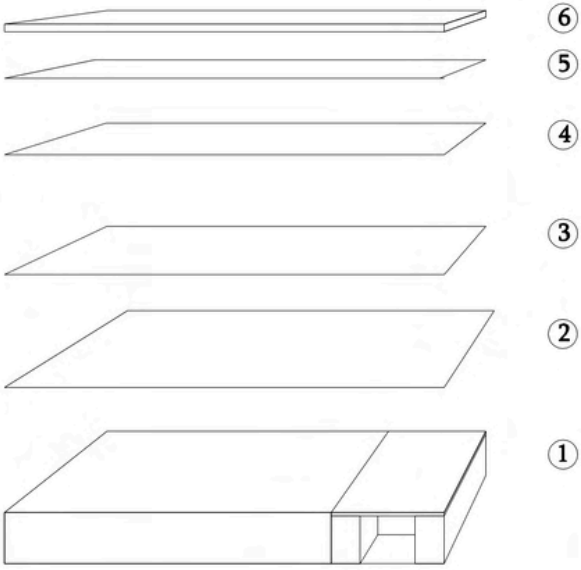
**Screwdriver**
- to install the thermostat

**Measuring tape**
- to measure the installation area

**Infrared Camera (not essential but useful)**
- to measure the temperature of the heating film

# iHelios Under Your Floor

1. Wood or mineral floor
2. Polythene protective membrane
3. iHelios Reflective Insulation
4. iHelios Heating Film
5. Polythene protective membrane
6. Final flooring



# An Overview of the Installation Process

The outlined process provides an overview of the installation steps for the iHelios Heating System. Each stage of the installation process will be explored in more detail as this section progress.

1. **PLANNING**
   - Prepare the designated location for the film.
   - Calculate the required size and wattage.
   - Select the appropriate thermostat and control system.

2. **PREPARATION**
   - The electrician should prepare wiring for the main supply in each heating zone.
   - Ensure the installation surface is accessible, clean, dry, and free of debris.

3. **MEASURING AND CUTTING**
   - Measure and cut the infrared film to fit the installation area using sharp scissors.
   - Follow the manufacturer's instructions carefully for cutting the mats to the correct size and in the correct manner.

4. **LAYING THE FILM**
   - Lay out the film on the installation surface, ensuring correct positioning without wrinkles, folds, or uneven areas.

5. **CONNECTING THE FILM**
   - Run electrical cables from the mats to the thermostat, and then from the thermostat to the power supply.
   - Connect the infrared mats to the thermostat and power supply.
   - Follow the manufacturer's instructions for correct and safe connections.

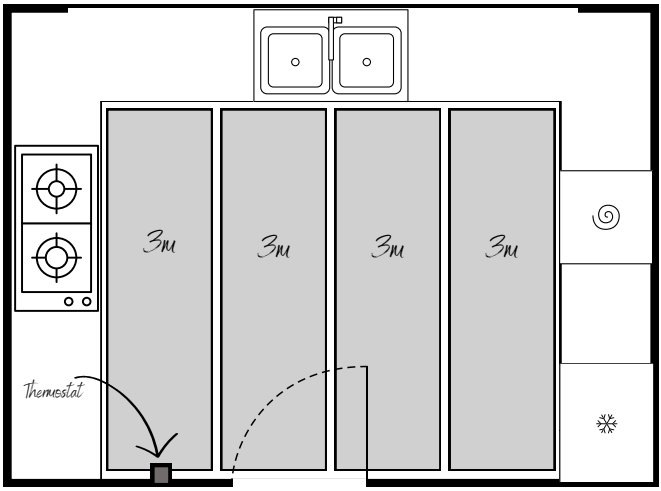
6. **TESTING AND COMMISSIONING**
   - Test the installed film to ensure proper functionality.
   - Turn on the power supply and monitor the temperature to verify it reaches the desired level.

7. **COMPLETING THE INSTALLATION**
   - Complete the installation by covering the film with a suitable final flooring such as panels or laminate.

**It's essential to emphasize the importance of reading and following the manufacturer's instructions throughout the entire installation process to ensure safety, proper functioning, and guarantee compliance. Following these steps meticulously will contribute to a successful installation of the iHelios Heating System.**

# Planning

**1** Consider the room layout and the possibility of placing iHelios Heating Film. Exclude areas where permanent objects, such as freestanding cabinets, will be located on the floor. Also, omit stairs and any areas where the floor is not level or flat. Sketch the room layout on the attached installation certificate, indicating the planned placement of the film. At this point plan also placement of the thermostat. As the film is connected in parallel you need to consider this when deciding the orientation to enable access to the connection point (usually the fused spur).




Kitchen layout

iHelios - 12m

**TIP**: Take a photograph of the room layout before covering for future reference.

**IHELIOS FILM PLACEMENT**

- iHelios Heating Film must be installed at least 250mm away from the perimeter wall.
- Ensure that iHelios Heating Film is not placed under fixed objects such as refrigerators, washing machines, chests of drawers, ottomans, or wardrobes. A gap of 40mm is required between the flooring and any furniture placed on the system.
- Layers of iHelios Heating Film cannot overlap in any way.
- The minimum distance you can install the film from a shower, toilet bowl or washbasin is 100mm.
- **THE SYSTEM CANNOT BE USED IN A WET ROOM.**

**THERMOSTAT PLACEMENT**

- iHelios Thermostat should be placed on the interior wall, away from other heat sources or direct sunlight, and not in a drafty location.
- The thermostat should be mounted at a height that is convenient for easy access and temperature reading.

# Electrical Preparation

2 All work must comply with current wiring regulations and installations must comply with Part P of the building regulations. Consult your local authority building control department regarding their requirements for certification or check with an electrician qualified to issue Part P certification regarding your individual installation. Therefore, it is important to ensure that electrical connections are made correctly and securely, using the equipment, materials and techniques we outline in the written instructions.

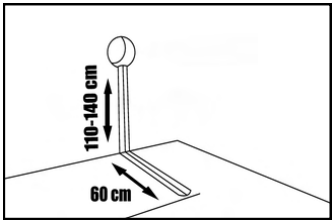
3 Calculate the heating power output and load of the planned installation based on the Kitchen example above:

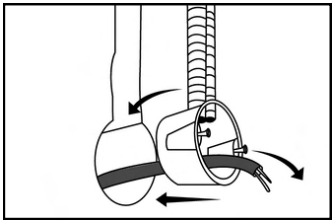
| iHelios film - sqm | Heating output | Load |
|---|---|---|
| 4 x 3 meter strips = **12 sqm** | 12sqm x 220W = **2640W** | 2640W/ 240V = **11Amp** |

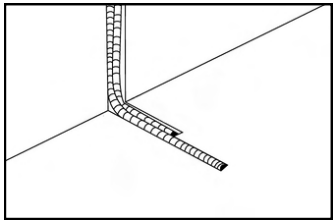
4 Examine the parameters of the electrical installation within the building to ensure that there will be no issues with concurrent usage of the heating film and other electrical devices or appliances. If the electrical connection's capacity is insufficient to support both the heating film and other devices safely, it must be upgraded to ensure proper operation.

5 Each room where the installation of the iHelios system is planned constitutes a separate heating zone, requiring its own electrical circuit. An electrician is required to install either a standard UK 13 Amp fused spur or a 20 Amp double pole switch for each thermostat, depending on the load; or a suitable circuit breaker.

6 Therefore, a 45mm back box for each thermostat must be fitted along with channels for three cables from the thermostat to the floor. To accomplish this, it is necessary to drill a hole for the electrical back box and carve out channels in both the wall and floor to accommodate the conduits intended for the floor temperature sensor and the wires supplying power to the heating film.





**ELECTRICAL PROTECTION**

- The main supply must be protected by a suitable Residual Current Device (RCD) to ensure safety.
- The thermostat should be connected to the power supply via a suitably rated circuit breaker for proper electrical protection.

**THERMOSTAT RATING AND LOAD MANAGEMENT**

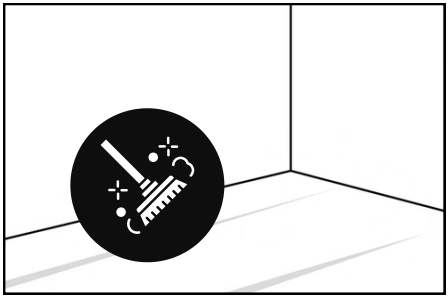
- iHelios thermostats are rated at 16 Amps. If the total loading from a combination of the heating film lengths exceeds this rating, there are two recommended options:
  * Zone the area and install a second thermostat with a suitably rated circuit breaker for each zone.
  * Install a suitably rated contactor that allows the heating system to be controlled through a single thermostat while managing the load effectively.

**THERMOSTAT PLACEMENT IN "WET" AREAS:**

- If the thermostat is placed outside the room to be heated or inside a cupboard (common in shower rooms, bathrooms, and other 'wet' areas), the thermostat needs to be reprogrammed upon initial setup to only monitor the temperature probe placed in the heated room. Instructions for reprogramming can be found in the thermostat user manual.

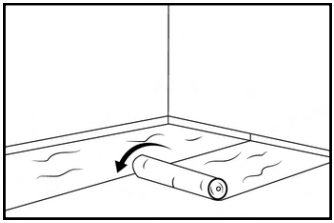
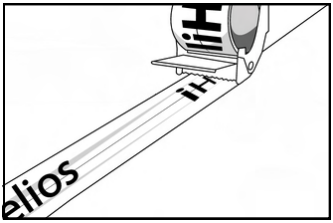
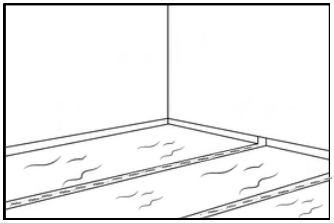
# Surface Preparation

7 The base must be solid, level, and free of dust. If the base is poorly insulated and constructed of various materials, insulation boards should be used to ensure even heating by the system. Insulation boards must always be installed in accordance with the manufacturer's instructions, and reinforcement tape must be used to secure the joints.

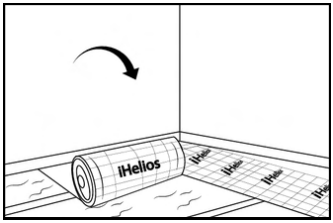


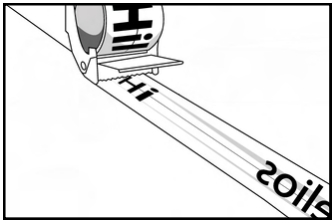
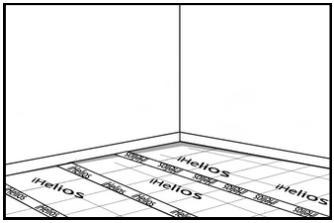
8 A wooden floor base should be suitably secured to eliminate movement. 6mm and 10mm structural insulation boards can be used for this purpose.

9 Before laying the iHelios heating film, the whole floor should be covered with the polythene protective membrane. This foil prevents any moisture. The membrane should be spread over the entire floor surface using the overlap method. The film should be folded and adhered to the wall. The joints of the foil should be sealed with iHelios tape.

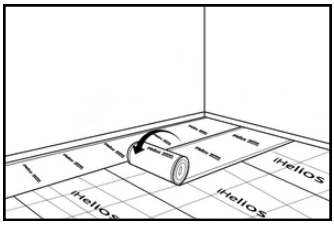
10 The next step is to lay out the iHelios Reflective Insulation. It should be spread out with the logo facing upwards across the entire floor surface. The strips of insulation should be placed next to each other to ensure that the level of the entire floor surface is even. The joints should be sealed with iHelios tape.

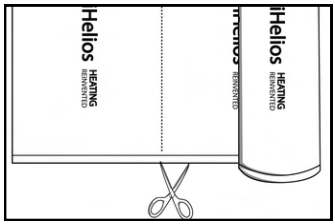


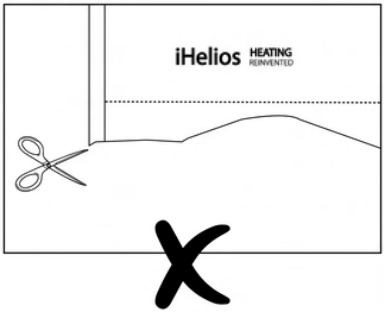
# Measuring and cutting

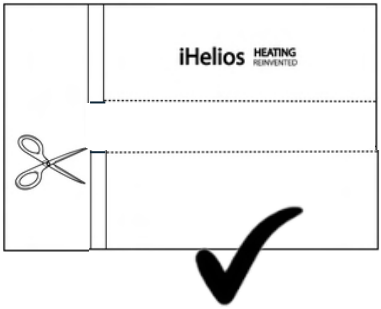
11 The iHelios film should be unrolled along the room towards the designated area for the thermostat. Unroll the film with the logo facing upward and cut the intended length. The iHelios film features markings for cutting every 25 cm.






THE FILM CAN ONLY BE CUT AT DESIGNATED LOCATIONS. IHELIOS CANNOT BE PIERCED, PUNCTURED, OR CUT AT AN ANGLE. IN SUCH CASES, THE DAMAGED PIECE OF FILM SHOULD BE CUT OFF ACCORDING TO THE INSTRUCTIONS.




**HELIOS FILM PLACEMENT**

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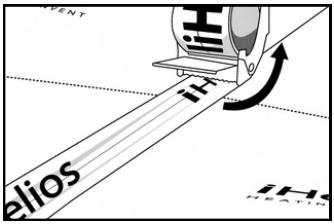
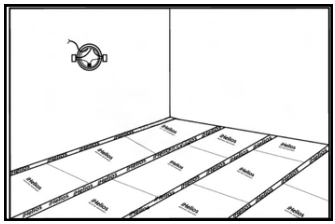
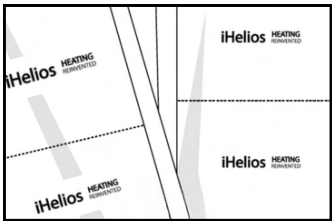
- **Ensure that iHelios Heating Film is not placed under fixed objects such as refrigerators, washing machines, chests of drawers, ottomans, or wardrobes. A gap of 40mm is required between the flooring and any furniture placed on the system.**
- **The minimum distance you can install the film from a shower, toilet bowl or washbasin is 100mm.**

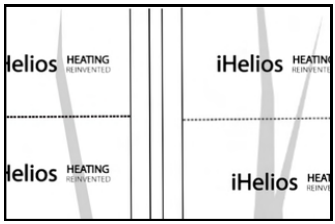
12 The strips of film should be laid with a gap of approximately 20mm between. Tape the strips with iHelios tape along its length to the reflective insulation so that the film remains stable and does not shift.





**Remember that the film strips cannot overlap or touch each other. Maintain a minimum distance between them.**



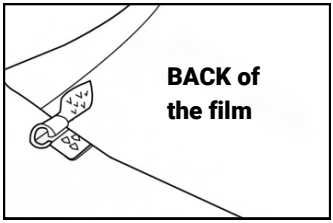



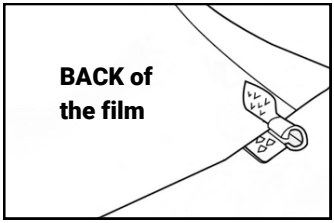
# Connecting the film

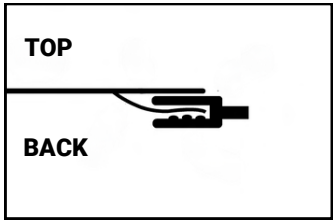
THE IHELIOS HEATING SYSTEM IS QUICK AND EASY TO INSTALL, THOUGH THE ELECTRICAL CONNECTION SHOULD BE DONE BY A FULLY QUALIFIED INSTALLER OR ELECTRICIAN. THE SYSTEM MUST BE TESTED AND APPROVED BY FULLY QUALIFIED ELECTRCIAN.

13 iHelios film strips are interconnected via 6241Y double-insulated cold tails. The cold tails are connected to the outlet box or directly into the thermostat that controls the heated room. For the crimping of connectors, iHelios connectors and iHelios crimping tool must be used exclusively or your guarantee will be invalid. Only insulation materials offered by iHelios must be used for the insulation of connectors and cut edges of the film.

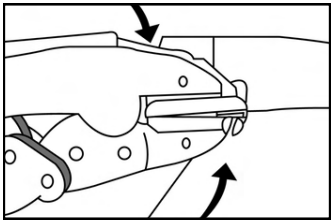
14 The first step is to fit the connectors into the film. Two connectors are placed into each film strip, attached to the side of the film located next to the wall where the thermostat is installed. The connector is placed beneath the copper strip. To do this, you need to apply gentle pressure to the end of the film separate the layers. Insert the connector into the film in such a way that it closes towards the inner side of the film.

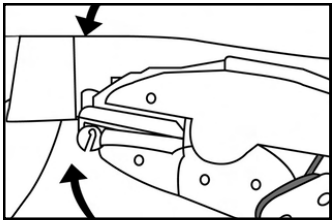


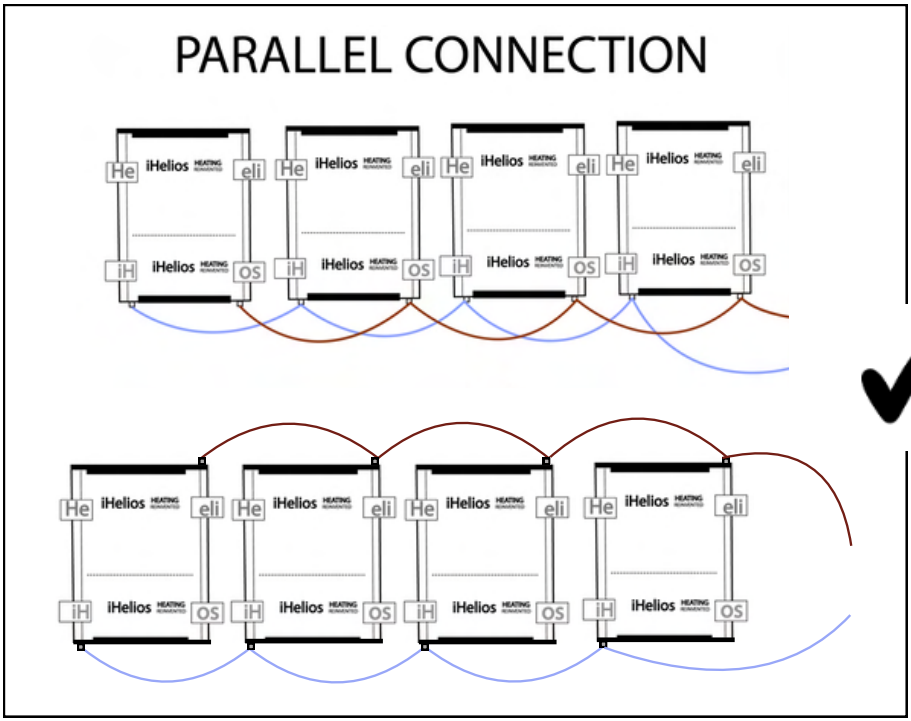



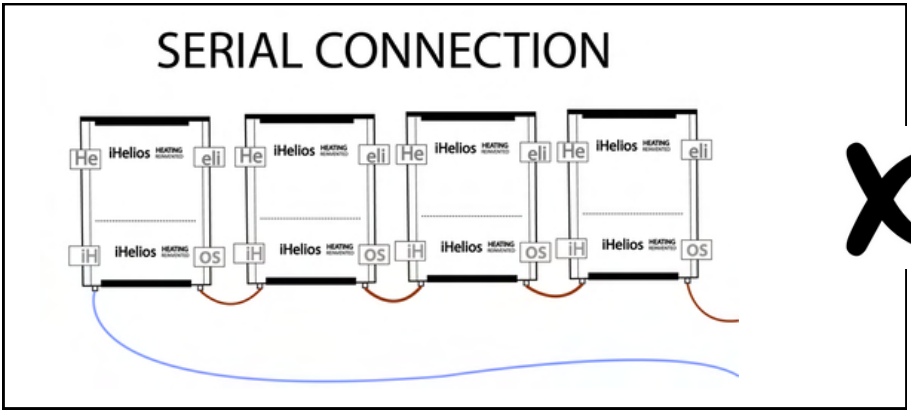

15 Next take the crimping tool and crimp the connector first from the hinged side of the fastener and then from the open side to ensure that the connector is crimped firmly in place. The crimping tools ratchet prevents the opening of the jaws before the desired pressure is achieved.





16 In the iHelios kit, you received two types of cables, one with a blue inner and the other with a brown inner. The film strips are connected in **PARALLEL** only; therefore, one side is live (brown cable), and the other is neutral (blue cable).

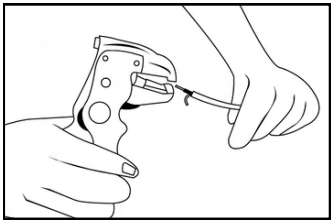


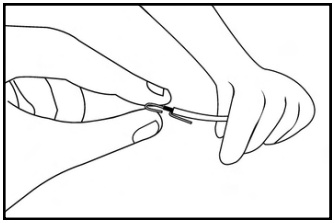




- **PERFORM ELECTRICAL CONNECTIONS WITH THE POWER TURNED OFF.**
- **ALL CONNECTIONS SHOULD BE MADE PRECISELY, CHECKING ITS TIGHTNESS AND CORRECTNESS AT EVERY STEP.**

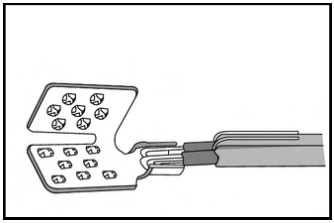
16 Run both cables through the prepared tunnel to the thermostat and cut to such a length that you can easily prepare the first connection. Now you can make the first cold tail connection. Strip the double insulation from both wires with pilers. Separate the earth wires.

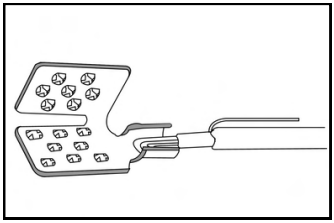
**THE WIRES CANNOT GO UNDER OR OVER THE HEATING FILM.**



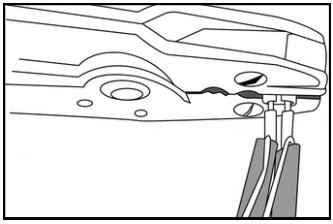


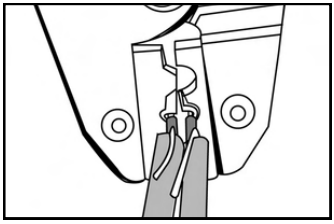
17 Now, bend the wires to create the cross-section. It must be at least 3mm2 because the connectors have been designed this way to enable 2 connecting conductors to be connected together. If one connecting conductor is required (the last section), it is necessary to bend the conductor into the connector in such a way that the required cross-section is achieved.

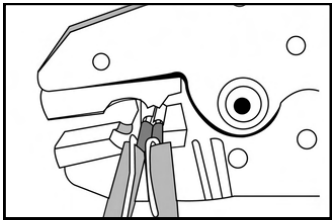




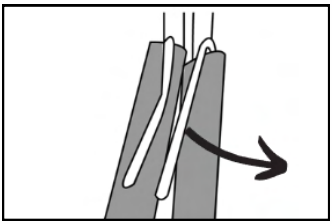
18 After placing the cross-section wires in the connector, they should be crimped using the crimping tool from 3 sides.

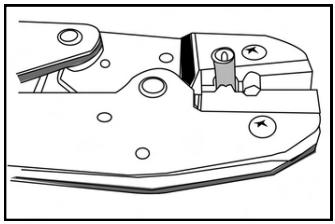




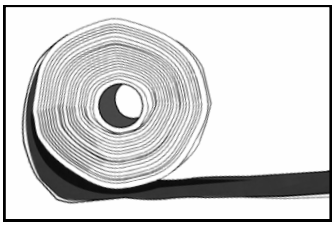
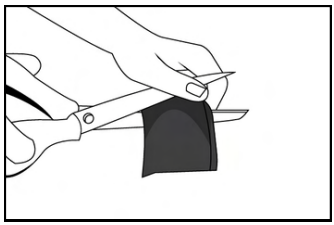
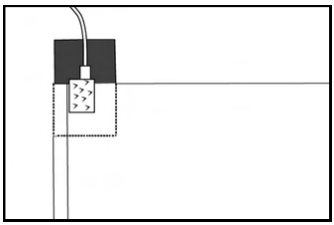
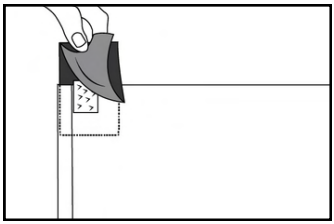
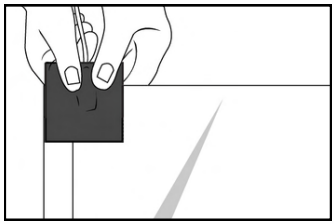
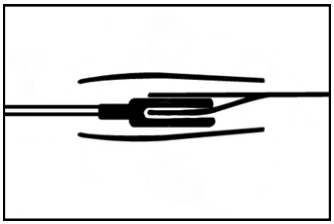


19 Secure the separated earth wires with blue Crimp Lugs. Tighten them using the the crimping tool. Finally, ensure that all the connections are securely crimped and solid. Continue connecting the cables while adhering to the parallel wiring diagram.

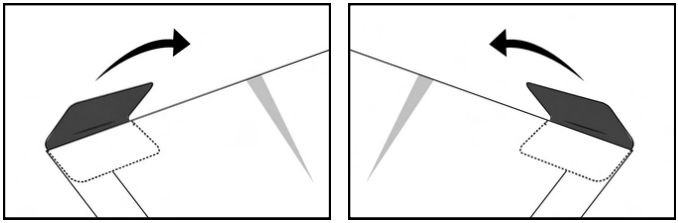




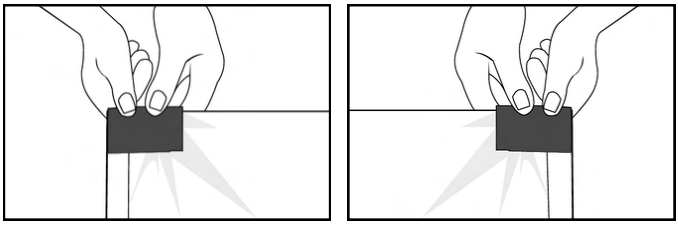
20 After creating the connections, you should secure them with the self-amalgamating tape provided in the kit. Cut the tape into 5cm pieces. Remove the protective layer, place them centrally over the connection to ensure a minimum overlap of 11mm from the live parts and press the sticky sides firmly together. This will seal your connection and provide a moisture proof barrier.

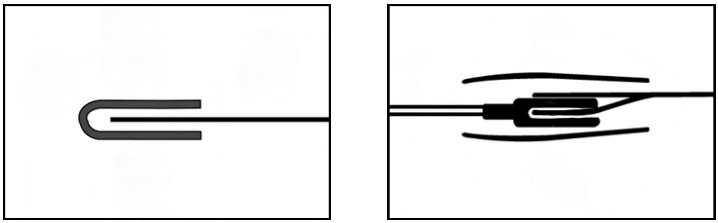
21 Seal the elements of the copper tape on both sides the opposite side of the film.



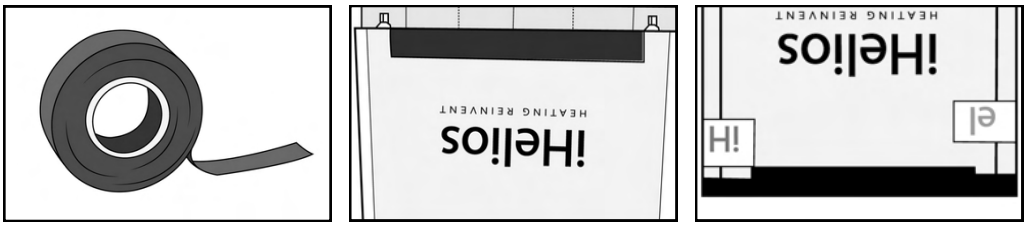
22 Press the tape onto the film and ensure it is firmly adhered.



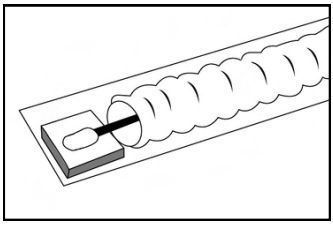
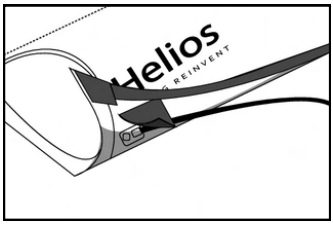
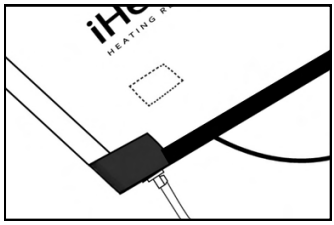
**Properly sealed connector and copper end.**



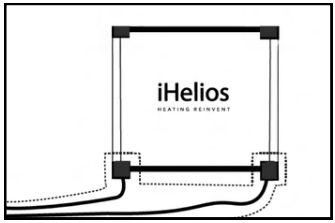
23 Both ends of the film should be secured with the electrical tape included in the kit.

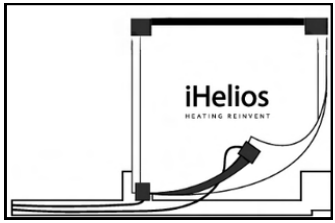


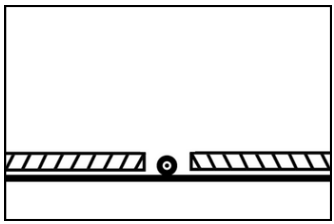
24 The next step is to position the sensor probe. Move aside the strip of film located next to the prepared conduit. Right at the end of the conduit, cut a hole in the reflective insulation for the probe sensor. From this piece, cut a smaller section that you will adhere to the floor at the carved channel end to secure the sensor. Then, run the sensor cable through the conduit and tape the sensor to the rear part of the film.

25 All elements of the connected heating film must be on the same level. Connections cannot be higher than the heating film. Therefore, in the next step, you need to determine and cut openings in the reflective insulation for the electrical wires using a utility knife.

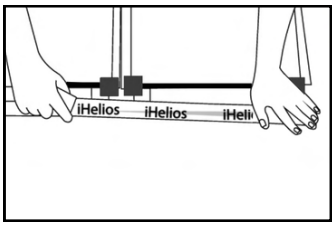


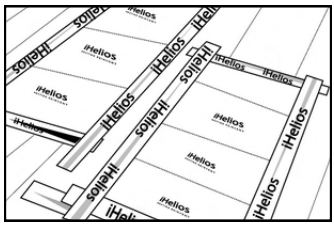


**Properly positioned wires.**

26 Carefully seal all created openings with iHelios tape. Make sure all the connections are secured.





# Testing and commissioning the iHelios Heating installation

27 It's important to test and commission the final installation. To do this you can calculate the total power input of the installed heating film. Where the power demand of the installed heating film is greater than the current carrying capacity of the existing connection, the size of the existing connection must be increased.

## POWER OF THE INSTALLATION

**P(W) = Pf(W) x Df(m2)**

**P** - Planned power of the heating film installation
**Pf(W)** - Power consumption of heating film per m2
**Df** - Surface field of installed heating film on the floor.

**Example** from the first page

- 4 x 3-metre strips of iH410 film were installed
- iHelios iH210 - 220W/sqm

Measure the installed length of the iHelios Film (m) and multiply (x) by the length output:

(W/m): P = 12 m × 220 W/m = 2640 W

Calculate tolerance: the lower is –10% = 2376 W and the upper is +10% = 2904 W;

## RESISTANCE OF THE INSTALLATION

The resistance of 1m length of 1000mm wide film is 250Ω (+/-10%)

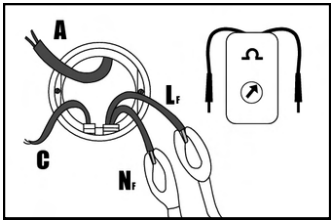
Divide the nominal resistance(Ω) by the measured length of the heating film:

R = 250Ω/ 12 m = 20.83Ω;

Please note that the total resistance decreases with increasing length.

Calculate the tolerance: the lower one is - 10% = 18.74 Ω and the upper one is +10% = 22.91 Ω;

28 Measure the resistance of the heating film with multimeter:
- in this example the measured resistance is 21.03Ω for 12m of iH410 film




Use the below formula to check the tolerance:

**P= U x U/ R**

P - output (W)
U - voltage (V) (The mains voltage is 240 V)
R - resistance (Ω)

As per above example = 240x240 / 21.03Ω = 2765 W;
(tolerance -/+10%)

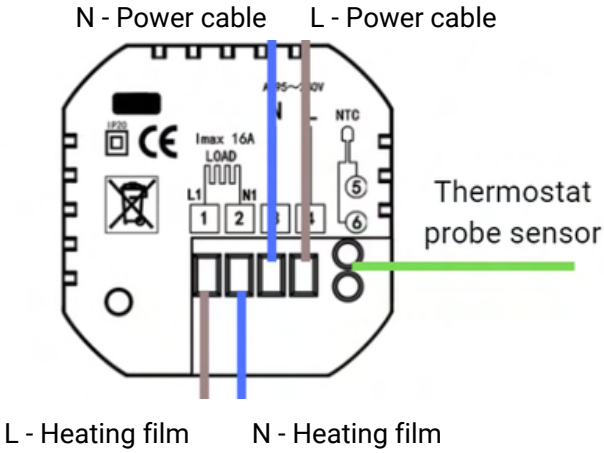
As the planned power of the installation was 2640 W, the value of electric resistance is within tolerance and is therefore satisfactory.

**IF THE MEASURED RESISTANCE AND POWER CALCULATIONS ARE NOT WITHIN THE TOLERANCE LIMITS (+/-10%), THE HEATING FILM INSTALLATION HAS BEEN CARRIED OUT INCORRECTLY AND CANNOT BE OPERATIONAL. RECHECK THE ENTIRE INSTALLATION!**

29 Complete the 1st Fix Installation Certificate with the resistance measurements.

- **THE RESISTANCE NEEDS TO BE MEASURED AND CHECKED BEFORE AND AFTER LAYING THE FINAL FLOORING.**
- **THE MEASUREMENTS MUST BE RECORDED IN THE 1ST & 2ND FIX CERTIFICATE TO QUALIFY FOR THE GUARANTEE.**

30 If the resistance is within the normal range, the heating film installation must be tested by connecting to the main supply according to the diagram below:




**BEFORE ACTIVATING THE MAIN POWER SUPPLY, ENSURE THAT ALL WIRES ARE CORRECTLY CONNECTED!**

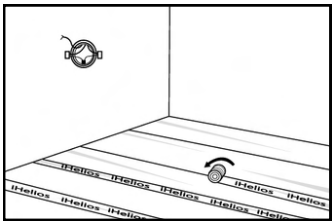
31 After the system is on, it is necessary to check if all heating film strips are warming up. You can do this by touching the film or by using an infrared camera.

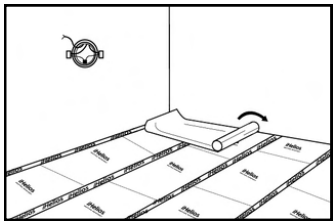
32 Once tested and approved it necessary to disconnect the power supply before further works.

**IF THE HEATING FILM DOES NOT HEAT UP, DISCONNECT THE POWER SUPPLY AND CHECK CAREFULLY ALL ELECTRICAL CONNECTIONS!**

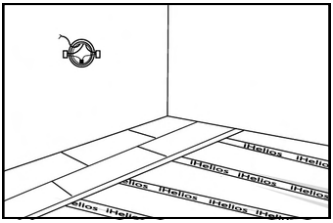
# Completing the installation

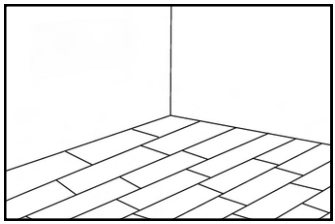
33 Once the iHelios installation has been tested and operates correctly you need to cover the film with another layer of polythene protective membrane. The joints of the foil should be sealed with iHelios tape.





34 The floor is now prepared for lying the final flooring. It is advisable to lay the finished floor covering immediately after installing the heating element. It is important to always check and ensure that the finished flooring is suitable for use with underfloor heating systems.

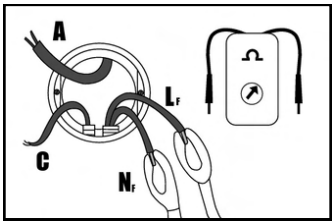




- **NOTE THAT IHELIOS HEATING FILM IS ONLY COMPATIBLE WITH LAMINATE, WOODEN, OR ENGINEERED FLOORING.**
- **THE FINAL FLOORING MATERIAL MUST HAVE A HARD FINISH AT LEAST 5 MM IN DEPTH.**
- **THE TERMAL RESISTANCE OF THE FINAL FLOORING MUST NOT EXCEED 0.15M2 K/W.**
- **THE CHOSEN FLOORING MUST BE OF THE FLOATING TYPE. IT CANNOT NAILED DOWN AS IT WOULD DAMAGE THE FILM.**
- **THE FLOORING MUST NOT CONTAIN ANY ADDITIONAL UNDERLAY, AS IT WOULD BLOCK THE DISTRIBUTION OF HEAT.**
- **DO NOT LEAVE ANY SECTIONS OF THE HEATING FILM OR CONNECTIONS UNCOVERED.**

# Completing the installation

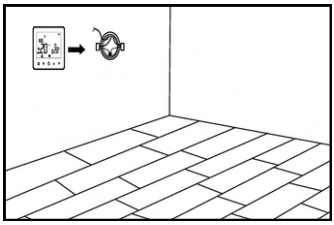
35 After laying down the final flooring, it is important to measure the resistance again.




- **IF THE MEASURED RESISTANCE AND POWER CALCULATIONS ARE NOT WITHIN THE TOLERANCE LIMITS (+/-10%), DAMAGE MAY HAVE OCCURRED TO ANY OF THE INSTALLATION COMPONENTS.**
- **TO IDENTIFY WHICH HEATING FILM STRIP HAS BEEN DAMAGED, IT IS EASIEST TO USE AN INFRARED CAMERA.**

36 Once all measurements are within the tolerance, complete the 2nd Fix Installation Certificate with the resistance measurements.

37 Install the thermostat according to the manufacturer's attached instructions. After the thermostat has been installed properly, verify the heating system's functionality. Warm up the installed floor covering as per the guidelines provided by the floor covering manufacturer.



**Thank you for following our instructions.**
**We wish you many warm years with iHelios!**

# iHelios Guarantee

iHelios Living Reinvented Limited provides limited guarantee to the original purchaser of the iHelios Heating System subject to the terms and conditions outlined below.

1. iHelios offers the following guarantee periods:
- Heating Film: The standard guarantee period is 2 years from the purchase date, extendable to 20 years with appropriate documentation.
- Thermostat: 2 years from the installation date.
- Smart Devices: 1 year from the installation date.

2 The extended guarantee is automatically valid from the date of installation ONLY with a copy of the purchase confirmation i.e. receipt or invoice, installation plan for each room and a copy of the Installation Certificate (included in these terms as an appendix).

3. The iHelios Guarantee is only valid when all components of the system are iHelios products. The use of any other sub-products or components not approved by iHelios voids the guarantee. The iHelios Guarantee does not cover:
- Damage caused by improper installation or improper use of the system.
- Damage caused by unauthorized modification or repair.
- Damage caused by external factors such as fire, flood, lightning, power surges, or acts of
- nature.
- Consumable components, such as fuses or batteries.
- Any system that has been tampered with or had its serial number altered or removed.

4. In the event of a guarantee claim, the Customer must:
- Contact iHelios Customer Support via email support@ihelios.co.uk to report the issue.
- Provide the Guarantee Certificate with the required documents.
- Follow the instructions provided by iHelios Team for troubleshooting or repair.

5. If a defect is confirmed and falls within the guarantee coverage, iHelios will, at its discretion, repair or replace the defective system or components.

6. iHelios' liability under this guarantee is limited solely to the repair or replacement of the System or components as provided in these terms and conditions. iHelios shall not be liable for any consequential or incidental damages arising from the use of the System.

# Documentation & record-keeping

Documentation and record-keeping are essential in any electrical installation. Reasons include:

**1. Compliance with regulations**
Electrical installations must comply with various regulations, codes, and standards. Documentation helps demonstrate that the installation has been designed, installed, and tested in compliance with these requirements.

**2. Maintenance and troubleshooting**
Electrical systems require regular maintenance and occasional troubleshooting. Documentation provides information about the system's components, layout, and operation, making it easier to diagnose and repair.

**3. Safety**
Electrical installations can be dangerous if not installed or maintained correctly. Documentation helps ensure that the system is designed and installed safely and that maintenance and repair work is carried out in a safe manner.

**4. Liability**
If an electrical installation causes damage or injury, documentation can be used to demonstrate that the installation was designed and installed correctly, and that maintenance and repair work was carried out in accordance with industry standards.

**5. Future modifications**
Electrical installations may require modifications or upgrades over time. Documentation provides a record of the installation's original design and construction, making it easier to plan and execute modifications or upgrades.

# IHELIOS INSTALLATION PLAN

Address: .....

Room: .....

Ceiling ☐ Underfloor ☐ Film type: iH403 ☐ iH405 ☐ iH410 ☐

How much heating film was installed? .....m² Resistance measured:.....

* Make a copy for each room

# IHELIOS INSTALLATION PLAN

Address: .....

Room: .....

Ceiling ☐ Underfloor ☐ Film type: iH403 ☐ iH405 ☐ iH410 ☐

How much heating film was installed? .....m² Resistance measured:.....

* Make a copy for each room

# INSTALLATION CERTIFICATE - 1ST FIX

All installations must be completed and tested by a fully qualified electrician or a competent person as stated in the IET wiring regulations BS7671:2018
*Must completed by the iHelios Approved Installer*

Date: .....

**Resistance Testing**

1. Each thermostat zone must be resistance-tested individually.
2. Measure the overall resistance for the iHelios Heating System and note the measured resistance for the number of rooms at the project.

System Resistance (Ohm):

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

How many linear meters are installed?

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

*Please take a picture of the iHelios Heating Film in each of the rooms before it is covered*

Customer's signature: .....

Installer's name & signature: .....

# INSTALLATION CERTIFICATE - 2nd FIX

To ensure the validity of your guarantee and compliance with the 18th Edition Wiring Regulations (BS7671:2018) please provide a plan layout of the iHelios Heating System. This sketch should be left next to the consumer unit of the heating system together with the thermostat user manual, guarantee, and a supplied sticker should be placed on the fuse box where the iHelios Heating System was installed.

**Part 1**

*To be completed by the iHelios Approved Installer*

Address of the project: .....

Client's name: .....

Client's contact number: .....

Client's email: .....

What is the total area of the property (m2)? .....

What is the total heated area of the property (m2)? .....

Model of the thermostat - How many thermostats? .....

Total heat requirement (Watts)? .....

Total load requirement (Amps)? .....

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

Have you marked the position of the thermostat on the sketch? YES / NO

Have you marked the position of the temperature probe on the sketch? Is Wi-Fi available ? YES / NO

If yes, have all of the thermostats been connected to the iHelios Living Reinvented App? YES /NO

Have all of the thermostats been calibrated? YES / NO

Has there been sensors set up to all of the thermostats? YES / NO

Has the temperature limit been setup to all of the thermostats? YES /NO

**Part 2**

***To be completed by the installer***

What is the total rated voltage (V)? .....

What is the measured resistance of the iHelios Heating System (Ohms)?

| | | |
|---|---|---|
| Room 1..... | Room 2..... | Room 3..... |
| Room 4..... | Room 5..... | Room 6..... |
| Room 7..... | Room 8..... | Room 9..... |
| Room 10..... | Room 11..... | Room 12..... |
| Room 13..... | Room 14..... | Room 15..... |

Installer's name & signature: ..... Customer's signature: .....

# YOUR iHELIOS HEATING SYSTEM GUARANTEE CERTIFICATE

Thank you for choosing **iHelios**.

Welcome to the future of space heating technology, where your comfort is secured with a TWENTY-year guarantee!

This certificate serves as proof of your iHelios Heating System installation and is required in the event of any guarantee claims. Please ensure all details are filled in accurately and that the necessary documents are attached. Your guarantee is valid only when all the required information and installation certificates are completed in accordance with the terms of our guarantee policy*.

Purchase Date: .....

Invoice/Ref Number: .....

Heating film type: .....

Thermostat type: .....

Customer's name: .....

iHelios Approved Installer's name: .....

Address of the installation: .....

Date of installation: .....

Invoice/Receipt attached ☐

Installation Certificates attached ☐

iHelios installation Plans (for each room) attached ☐

* See our terms and conditions document for full guarantee details.

iHelios Living Reinvented Ltd
The Old Brass Foundry
Marlborough Terrace Hull,
HU2 9AE

01482 699314
info@ihelios.co.uk
**iHelios.co.uk**

# Terms & Conditions of iHelios Guarantee

**Basic information**

1. This guarantee is provided by iHelios Living Reinvented Ltd (The Old Brass Foundry, Marlborough Terrace, HU2 9AE), hereinafter referred to as the "Guarantor" or “iHelios”.
2. The guarantee outlines the obligations and rights of both the Buyer and the Guarantor regarding the iHelios Heating System.
3. The guarantee is only valid when issued in accordance with the terms provided herein. Any statement about the guarantee in another document not connected to this one does not establish a guarantee relationship.
4. This guarantee covers hidden defects in the materials or workmanship of the product that prevent its intended use.
5. The guarantee is assigned to the property at the installation address.
6. The iHelios standard guarantees cover:

- iHelios Heating Film: 2 years, extendable to 20 years with appropriate documentation.
- Thermostat: 2 years from the purchase date.
- Smart Devices: 1 year from the purchase date.

**Conditions of the guarantee**

1. The guarantee is valid provided that the heating system has been installed according to the manufacturer’s instructions outlined in the installation manual.
2. The guarantee expires if:

- There is unauthorized interference with the system by the customer or a third party, including independent repairs or modifications.
- There is the use of sub-products or components not approved by iHelios

3. The guarantee does not cover:

- Damage caused by improper installation or improper use of the system.
- Damage caused by unauthorized modification or repair.
- Damage caused by external factors such as fire, flood, lightning, power surges, or acts of nature.
- Consumable components, such as fuses or batteries.
- Any component or product that has been tampered with or had its serial number altered or removed.

**Guarantee extension**

1. The guarantee period may be automatically extended to 20 years, provided that the following conditions are met:

- Installation must adhere to all guidelines outlined in the installation manual.
- Installation documents, including the Installation Certificate, Installation Plan for each room must be correctly completed and signed by an Approved Installer. (List of approved installers available on our website)
- The customer must provide proof of purchase (i.e., receipt or invoice).
- The customer must complete the Guarantee Certificate Form.

2. It is the Customer's responsibility to retain all necessary documentation listed in the 1st point and provide them in case of a guarantee claim. Failure to present the required documents will result in the rejection of the claim.

**Customer’s Responsibilities in Case of Defects**

1. In the event a defect is discovered, the Customer is obliged to immediately take measures to prevent further damage or additional losses, including ceasing use of the product.

**Guarantee claim**

1. A Customer intending to exercise the right under the guarantee is obliged to present the original, correctly completed documents, including:

- Installation documents, including the Installation Certificate, and Installation Plan for each room.
- Proof of purchase (i.e., receipt or invoice).
- The completed Guarantee Certificate Form.

2. In the event of a claim based on the extended guarantee, failure to present the required documents will result in the rejection of the claim.
3. A Customer intending to exercise their right under the guarantee must promptly inform the Guarantor in writing about any defects or faults in the product or service provided by iHelios. The Guarantor recognizes only those defects or faults indicated in the written content of the Buyer's claim, supported by photographic evidence when applicable.
4. The Customer is obligated to submit the claim along with written details and photo evidence to support@ihelios.co.uk to facilitate a thorough assessment by the Guarantor.
5. The Buyer must report to iHelios Living Reinvented Ltd that sold the goods or services.
6. Within 14 days of the notification, the Guarantor is obliged to check the validity of the Buyer's notification. A guarantee claim verification report is prepared from the inspection activities.
7. If the claim is justified, the Guarantor shall perform the repair as soon as possible, individually agreed with the Guarantor holder, upon agreement of the parties.
8. Repairs under the guarantee may be made only by entities authorized by the Guarantor.
9. After the guarantee repair has been performed, the card must contain:

- Information about the repair
- Information about the scope of repair
- Details of the person performing the repair, including a personal stamp and signature.
- Date and numbers of issue of the certificate to the entity performing the repair.

**Guarantee Repair or Replacement**

1. Under the guarantee, the Guarantor is responsible for either repairing the product or replacing it with a defect-free one, at their discretion. The Guarantor will inform the Buyer of the selected remedy or, if applicable, the rejection of the guarantee claim.
2. The Buyer exercising their rights under the guarantee is required to deliver the product to the Guarantor's office unless the Guarantor agrees to perform the replacement or repair at another location (e.g., at the site of the product). After completing the guarantee obligations, the Guarantor will notify the Buyer of the repair and return the product at their own expense to the place from which they received it from the Buyer.
3. If the claim is justified, iHelios will reimburse the Buyer for the delivery cost to the Guarantor's office, up to the value of the lowest available shipping cost.
4. In cases of an unjustified claim, the Buyer will bear the cost of returning the product, based on iHelios's pricing, or the cost of iHelios technicians traveling to inspect the product, including the service fee (determined by iHelios's hourly rates).
5. If iHelios is not responsible for the defect, the Buyer may commission iHelios to perform a paid service, which will be priced based on the time taken for the repair and the hourly rate of iHelios employees.

**Guarantee Duration Extension**

1. If the Guarantor provides a replacement product free from defects or conducts a significant repair of the product covered by this guarantee, the guarantee period is extended by the time between reporting the defect to the Guarantor and its resolution or the delivery of a defect-free product.

**Limitation of the Guarantor's liability**

1. The total amount of all Buyer's allowance for which the Guarantor is responsible during the guarantee period is the equivalent of the net price of the product sold, specified in the sales document.
2. The total amount of the Buyer's allowance for which the Guarantor is responsible in the case of a single repair is the equivalent of the net price of the defective product or its component part, if it is possible to quantify according to the value at the time of notification of the defect; however, it may not exceed the amount determined in accordance with the first point.
3. The Guarantor's liability does not cover product defects and faults if:

- The product has been installed contrary to its intended use, or was not selected, installed, or used in appropriate conditions according to the product's installation and operating instructions.
- The product has been damaged as a result of mechanical factors or other external influences, such as thermal or chemical factors, flooding, moisture exposure, excessive dirt accumulation, or faulty operation of other installations (e.g., electrical) or devices impacting the product's performance.
- The product has been damaged due to random events or acts of force majeure, such as fire, flooding, lightning, or similar unforeseen events.
- The product has been used in conjunction with non-original or incompatible accessories or components not recommended by the manufacturer.
- The transport, unloading, storage, cleaning, or maintenance of the product was not performed according to the instructions provided in the product's User Manual.
- In cases where the extended guarantee is claimed, the heating film installation must have been carried out by an installer authorized and certified by iHelios (a list of certified installers is available on the iHelios website).
- The electrical installation to which the product is connected had incorrect voltage or lacked proper over-current and differential-current protection.
- Independent modifications or alterations were made to the electrical installation by the user or unauthorized persons.
- Renovation works carried out after the product's installation did not comply with the assumptions in the as-built design or were performed contrary to construction law.

4. The guarantee covers the Guarantor's product exclusively purchased in the UK.
5. Provided these products are installed in a location in the UK moving the installed products outside the UK results in the expiry of the guarantee rights.
6. Relocating the heating system to any other location invalidates the guarantee, as it is assigned to the installation address due to the product adaptation to the specific building.

iHelios LIVING REINVENTED