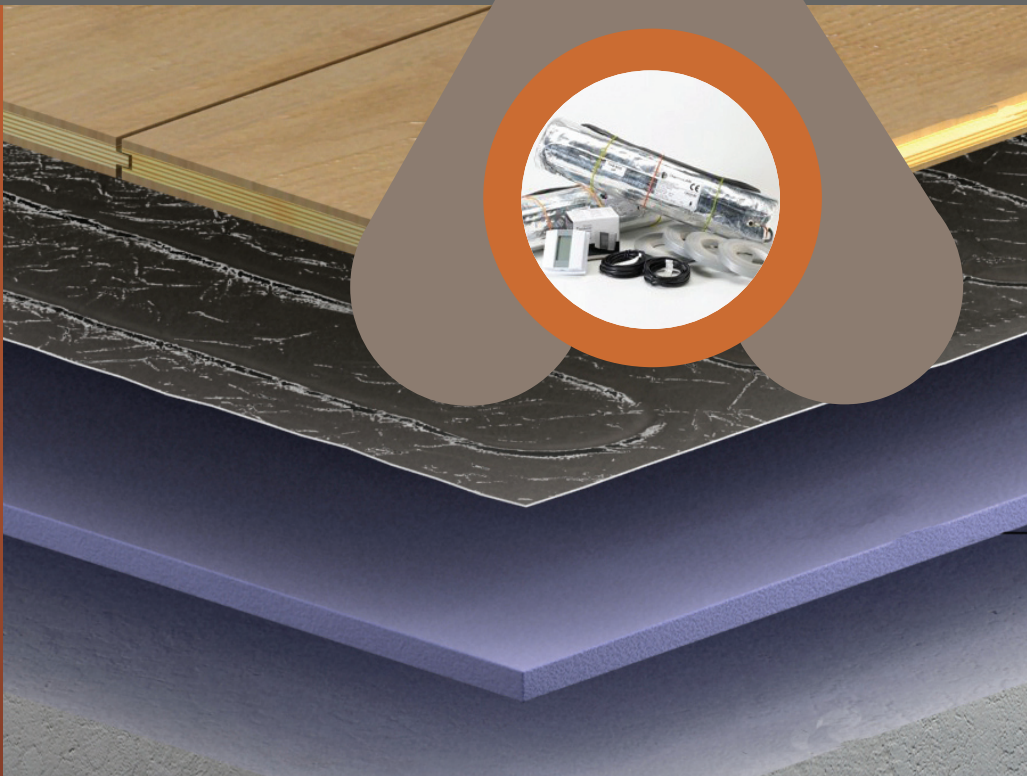




## ThermoLAM Foil Heater Installation Instructions



# ThermoLAM Foil Heater ambi-Heat brand manufactured by Thermopads

**Before you begin installing please read through these instructions carefully & check that you have all the components required.**

The system is designed for installation below Laminate & Engineered Wood Flooring, it may also be installed below vinyl, & carpets but in these cases must first be covered with a suitable fibre board overlay

## Compatible Wood Laminates

Most modern 8 mm thick wood laminate floors are compatible with ThermoLAM mats, but floors that have metallic strips as part of their locking systems are **NOT** compatible as these metallic strips may damage the ThermoLAM mats. Also laminates that have their pad already attached to the laminate are not compatible with the ThermoLAM mats.

## CONTENTS OF HEATING KIT:

- Heating mats(s) with single core heating cable encapsulated within a reinforced foil
- Fixing tapes
- Foil Earthing Strips
- Guarantee Certificate

## Installation Notes

- The system requires a mains voltage 230/240v & must be connected by a suitably qualified person (part P building regulations 2005). All wiring must conform to IEE Edition Wiring Regulations.

ThermoLAM is ultra thin electric radiant floor heating system primarily for use under laminate, engineered wood and glued hardwood. Advantage of using ThermoLAM is the ease of installation and uniform heating of your flooring.

ThermoLAM is constructed using fluoropolymer insulated heating cables. These are sandwiched between two layers of specially reinforced aluminium foil. The uniform spacing of the heating elements, further backed by the aluminium foil, ensures even heat distribution.

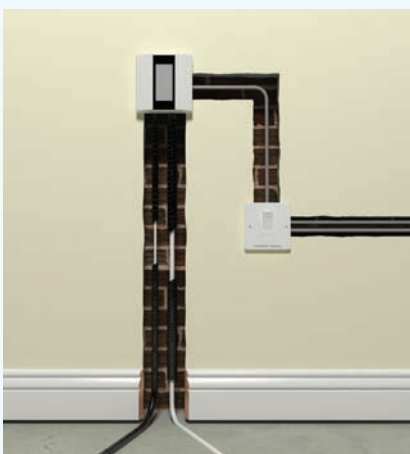
The heating element is connected to a power-supply cable, which exits the laminate mat from one corner. The power lead is a flat two core flexible, consisting of two insulated conductors with a metal sheath and an outer sheath providing the earth connection. ThermoLAM is available in nominal heat outputs of 80 W/m<sup>2</sup> and 140 W/m<sup>2</sup> @ 230 V.

It is available in predetermined lengths with cold tail – prefabricated & tested in a carefully controlled factory environment.

- The system is primarily intended for heating Laminate & the mat output/wattage is given on the box & label.
- For larger areas, if two or more mats are supplied, these would usually be connected together at the thermostat or by using a blank fronted connection box.
- The system is suitable for installing on any sub-floor which is sound and must be laid on to a suitable soft insulation material such as Depron. Minimum insulation thickness is 5mm but 10mm is always a preferred option.
- The electrical & electromagnetic fields generated are negligible & well within all recommended European & International guidelines
- The foil matting can be cut, but the heater cable **MUST NOT** be cut, shortened or joined. The heating system must be earthed.

## Electrical Provision

Before starting the installation you should make provision for the electrical connections, for smaller areas this should be possible by means of a fused spur or combined RCD spur from an existing circuit- **see below**. However for larger areas a separate circuit from the distribution board is recommended – you should always consult with your electrician concerning your specific requirements.



**Note - if installing in a bathroom or other 'wet' room the thermostat must be located OUTSIDE of the room on the opposite side of the wall, for example in a bedroom or hallway/landing.**

## Controlling Your System

Ambient recommends the AUBE TH232 programmable thermostat to control the ThermoLAM heating system. The AUBE TH232 is supplied with 2 x floor sensors (connect one only probe the other is a reserve / backup) that allows you to set your heater to the exact temperature you desire. These sophisticated units also allow you to set the time – for example one may choose to have a warm bedroom floor first thing in the morning upon waking, the floor does not need to remain warm during the day, but can be programmed to come on again for a few hours around bedtime.

Most wood laminate manufacturers specify that their floors should not be subjected to temperatures in excess of 28° C. The only reliable way to achieve this is to install a temperature sensor on top or directly under the ThermoLAM mat, placed under the wood laminate. Check with your laminate manufacturer to see what their recommendations are for installing electric radiant heat under their floors.

## Professional Electric Installation

**Caution:** The installation of electrical systems presents risks of fire and electrical shock which can result in personal injury. Caution should always be taken to guard against each such risk. Only a qualified electrician should connect ThermoLAM mats to the thermostat and / or to the electrical supply circuit. All such connections **MUST** be in accordance with the current IEE wiring regulations.

# Items Required for System Installation

- Appropriate insulation / underlay (Depron)
- Digital Ohm Meter (multi-meter)
- Electrical Housing Boxes / Switch Plates

## Testing – Required for Guarantee

Each and every ThermoLAM mat is carefully tested before it is shipped from the factory, and is packed suitably to avoid damage during transit. However, damage does sometimes occur in storage or transit, and sometimes during installation. We strongly recommend you test your mats:

- After unpacking them but before you install them
- After you have installed them but before you install the floor covering (i.e. while the mats are still exposed)
- After installation of the wood laminate but before the thermostats are connected

A simple test is a visual inspection to make sure there is no visible damage to the heater, and in particular to the cable component in the heater. A simple electrical inspection can be done with an ohms meter to make sure the ohms resistance is what it should be (see page 9). Ohms resistance can vary significantly depending on the ambient temperature and an allowance of -5% to +10% from the nominal value is acceptable.

**Resistance readings must be marked down on the control card (page 10) to validate the manufacturers guarantee.**

## Pre Installation

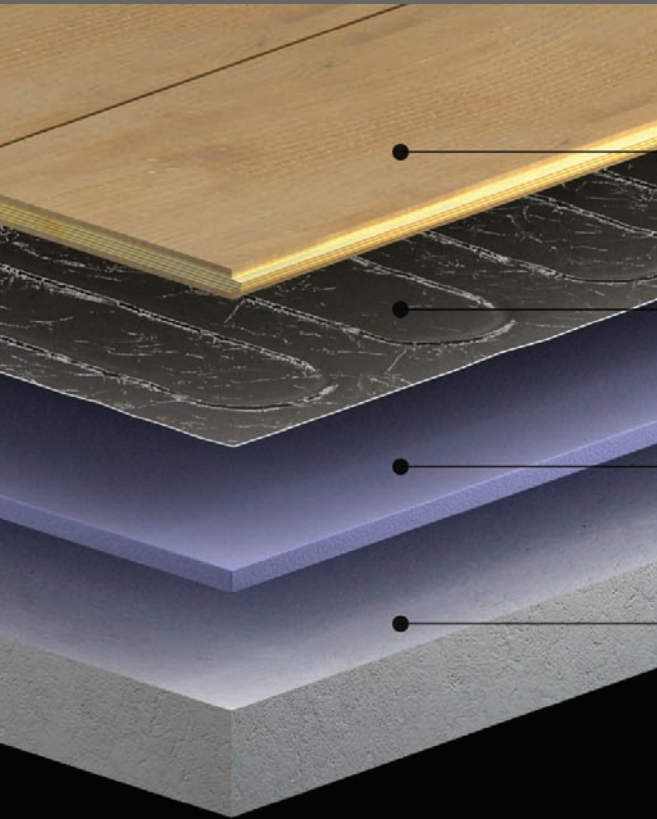
Ensure the sub floor is structurally sound. The sub floor should be clean and dry. To prevent damage to the mats, special attention should be given to ensure that no nails, screws, staple, tacks and the like are protruding from the sub floor before the underlayment is installed. Beware of automatic staple guns if you use one to secure the cushion / underlayment to the sub floor. A badly installed staple that protrudes from the floor can pierce and destroy the ThermoLAM mat.

Nails, screws or staples should not be installed close to the mats and power supply cables. Permanent fixtures, including built-in furniture, must **NEVER** be installed on top of the mats. It is important to keep an accurate record of where the mats are installed, to assist you (and a future owner!) to easily locate them when you undertake remodeling work in the room at some future date. Taking a few photographs during the installation process is a good idea.

## Insulation/Underlay

**DO NOT install without underlay.**The preferred underlay is either 5mm to 10mm of Depron (XPS) but other materials may be suitable, check with your supplier. If using a 10mm Depron insulation we recommend using 2 x 5mm thicknesses cross laid as this will minimize the risk of joints between the insulation panels opening up over time.

No additional underlay is required between the ThermoLAM mat and flooring.



Wooden Floor

Thermolam

Insulation

Floor base



# Installing the Thermostat & Floor Sensors

You must use a thermostat with a floor sensor, tape the sensor(s) in to a slot between two runs of ThermoLAM heating mat, or center between two heater wires beneath the foil, at least 150 mm into the heated area.

Run the sensor cables back to the thermostat, only connect one sensor to the thermostat terminals as the other is a backup in case of future failure. The "heater wires" within the heater are identified as raised parallel lines, the sensor wire should not cross over or under the foil heater wires.

## Plan the Mat Layout

**This is a very important step & MUST be done correctly to ensure all the mat is used up. Once the mat has been unrolled and or cut the mat cannot be returned.**

First measure the area to be heated in m<sup>2</sup> (do not include the area taken up by fixed objects such as baths/showers & kitchen units). If the heated area is smaller than the chosen mat size **STOP** & return or exchange for the correct size.

## Laying the Mat

Once the underlay has been fitted over the entire floor area, remove your ThermoLAM mat from the packaging box, unroll it completely and place it in the required position on top of the underlayment.

**When positioning the mat on the insulation, be aware of the following:**

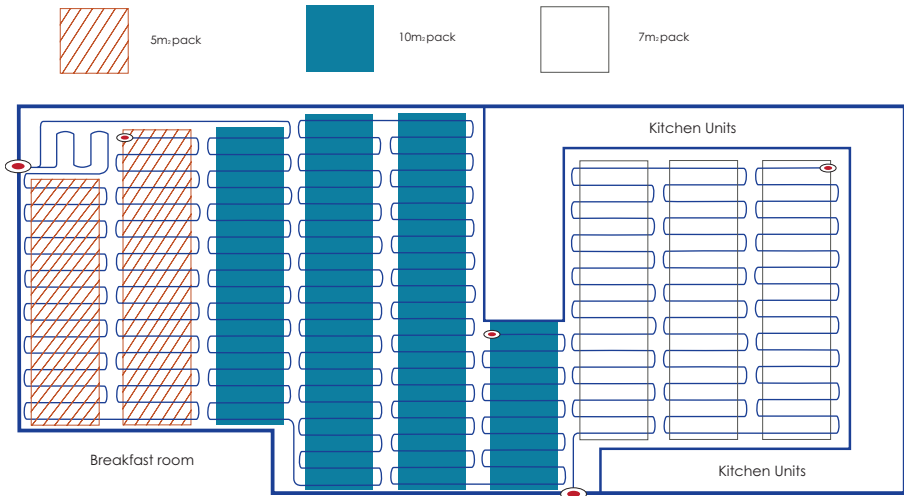
- Keep it at least 50mm from any edge of the area to be laminated.
- Allow approximately 25mm between adjacent mat runs.
- Ensure the power supply cables can reach the thermostat point to which they will be connected; cold tails can be extended by your electrician if required
- Wherever possible, run the power supply cables parallel or at right angles to the walls, and avoid high-traffic areas;
- Wherever possible, keep the corner where the power supply cable enters the mat away from high traffic areas;
- NEVER run the power supply cables under or over the mats;
- When fitting more than one mat in a room, the mats **MUST NOT OVERLAP**, as overheating will result.

ThermoLAM mat can be cut and turned at 90° or 180° (as shown in picture on the right) while laying to cover the total area. (Cable should not be cut).

**All cut section must be joined using the conductive foil strips supplied.**

**ThermoLAM MATS MUST NEVER BE CUT OR TRIMMED TO FIT INTO A SPACE THAT IS TOO SMALL**

Smooth out the mat and adhere the mat to the insulation material with adhesive tape supplied.



After deciding the route that your power supply cables will take from the mat to the point of supply, cut a 6 mm wide channel in the insulation along this route and drop the power supply cables into this channel. Similarly you have to cut a small section / channel in insulation or laminate depending on the position of Thermostat sensors.

You may also need to remove a small section of insulation from under the mat at the point where the power supply cord enters the mat, to prevent an unsightly lump on the Laminate surface and excessive wear on that part of the mat.

When installing two or more ThermoLAM heating mats next to each other make sure that the heating wires in adjacent mats do not overlap and we recommend the use of adhesive tape to assure that they will not overlap over a period of time.

ThermoLAM mats must be fitted directly on top of the insulation, and directly under the wood or laminate flooring.

To avoid damage to your mats during installation, care must be taken so that tools with sharp edges or points are not dropped or used carelessly on top of the mats. Do not walk on the mats more than is absolutely necessary during installation, and do not drop or place heavy articles on the mats.

ThermoLAM mats must not be used folded and care should be taken not to fold or crease the mats at any time during installation. For this reason ThermoLAM mats are not suitable for use on stairs. Should you wish to move your mat at some later stage, please remember to roll it rather than folding it.

In the event of any apparent contradiction between the ThermoLAM instructions and the wood laminate instructions, kindly contact your supplier for clarification on how to proceed.

Position the sensor between two runs of mat & tape into position, a groove will be required to enable the housing conduit to sit flush with the heating cables. The sensor wire can be shortened or lengthened, but if you do need to shorten it only cut the end containing the wires. **DO NOT** cut the end which contains the plastic sensor. The connections to the thermostat can now be made

**Note:** These installation instructions are **NOT** intended to replace or supersede the installation instructions provided by the manufacturer of the wood laminate, but to supplement them. **BOTH** sets of installation instructions should be complied with.

## Do's & Donts



**DO**

ThermoLAM must be laid onto a soft insulation min. 5mm thick  
Read through these instructions carefully before beginning work  
Test the cable **BEFORE** and **AFTER** filling  
Be careful not to damage the heating cable  
Allow at least 50mm gap between mat and walls  
Allow a 25mm gap between adjacent mat runs  
Try to protect the cable mat with cardboard or carpet when working over  
Read the separate installation & operating instructions for the thermostat



**DON'T**

Attempt to cut or join heater cable at any point  
Allow the heater wires to cross or touch at any point  
Allow excessive foot traffic over the mats before finished floor is laid  
Cut wood or laminate directly over the heating mat



**DO**

Ring your supplier for advice if in doubt regarding any aspects of your heating installation. **Technical Support: 01799 524730**

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# Resistance Table - ThermoLAM Foil Heating Mats

All mats are tested post production

## Technical Support

Tel: 01799 524730

Email: [info@ambient-ufh.co.uk](mailto:info@ambient-ufh.co.uk)

### THERMOLAM FOIL MATS 140 W/M<sup>2</sup> (LFM)

Watts (power)	Length (Meters)	Resistance (ohms)
140	2	378
210	3	252
280	4	189
350	5	151
420	6	126
490	7	108
560	8	95
630	8	84
700	10	76
840	12	63
980	14	54
1120	16	47
1260	18	42
1400	20	38
1540	22	34
1680	24	32



# Guarantee Certificate – Ambient Electrical Ltd.

## Under Tile Cables, Mats, in Screed Systems & Thermolam

This guarantee is only valid if installed by a qualified electrician/electrical contractor. This installation must conform to Part P of the building regulations 2005 and be carried out in accordance with current IEE wiring regulations.

In order to validate the guarantee the resistance values & signature of the installer must be completed. A currently calibrated piece of test equipment must be used.

The guarantee covers reported manufacturing defects within the heating cable for the life time of your floor finish or 15 years whichever is the sooner; programmable thermostats and floor sensors are covered for a period of two years from date of original invoice.

Faulty components covered by this guarantee are repaired or replaced at our discretion, where repair or replacement is not practical a refund of original purchase price may be offered. Other costs such as replacement or repair of flooring materials are not covered by this guarantee.

The guarantee is not invalid if faults are caused by damage attributable to incorrect installation, misuse or mechanical damage such as drilling or puncturing the floor.

**Please retain this guarantee along with your original purchase invoice.**

## Test Report

PRODUCT	WATTAGE	RESISTANCE BEFORE FITTING	RESISITANCE AFTER FITTING	INSULATION RESISTANCE 500v PN-E
Mat / Cable 1.				
Mat / Cable 2.				
Mat / Cable 3.				
Mat / Cable 4.				
Mat / Cable 5.				
Mat / Cable 6.				

Customer Name: .....

Customer Address: .....

.....

Electrical installation by: .....

Serial number of calibrated test equipment: .....

Underfloor Heating installation by: .....

Date..... Signature .....

Catalogue Ref	Length of Mat (M)	Width of Mat (mm)	Area (M <sup>2</sup> )	Resistance (Ohms)	Watts (W)
LFM-T-140	2	500	1.0	378	140
LFM-T-210	3	500	1.5	252	210
LFM-T-280	4	500	2.0	189	280
LFM-T-350	5	500	2.5	151	350
LFM-T-420	6	500	3.0	126	420
LFM-T-490	7	500	3.5	108	490
LFM-T-560	8	500	4.0	95	560
LFM-T-630	9	500	4.5	84	630
LFM-T-700	10	500	5.0	76	700
LFM-T-840	12	500	6.0	63	840
LFM-T-1980	14	500	7.0	54	980
LFM-T-1120	16	500	8.0	47	1120
LFM-T-1260	18	500	9.0	42	1260
LFM-T-1400	20	500	10.0	38	1400
LFM-T-1540	22	500	11.0	34	1540
LFM-T-1680	24	500	12.0	32	1680

All kit sizes above 12m<sup>2</sup> comprise TWO mats – connect in parallel

LFM-1820	12+14	500	13.0		840+980
LFM-1820	14+14	500	14.0		980+980
LFM-1820	14+16	500	15.0		980+1120
LFM-1820	16+16	500	16.0		1120+1120
LFM-1820	16+18	500	17.0		1120+1260
LFM-1820	18+18	500	18.0		1260+1260
LFM-1820	18+20	500	19.0		1260+1400
LFM-1820	20+20	500	20.0		1400+1400
LFM-1820	22+22	500	22.0		1540+1540
LFM-3360	24+24	500	24.0		1680+1680

All kit sizes above 12m<sup>2</sup> comprise THREE mats – connect in parallel

LFM-3640	16+18+18	500	26.0		1120+1260+1260
LFM-3640	18+18+20	500	28.0		1260+1260+1400
LFM-3640	20+20+20	500	30.0		1400+1400+1400
LFM-4760	20+22+22	500	32.0		1400+1540+1540



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