

RADIANT FLOORS

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Installation Instructions

RFLAM Underlamine Foil Heating Mat System

The RFLAM underlamine foil heating mat system is the ultra thin underfloor heating system from Radiant Floors primarily for use under laminate, engineered woods, and other floating floors. The following instructions should be read carefully before you begin your installation.

Please read these instructions and complete your Guarantee and return it to Radiant Floors after installation.

RFLAM systems are installed directly under laminate or engineered wooden floors, on top of the underlay. The LAMFOAM underlay must be applied to the floor before the underfloor heating. The underlay (floor insulation) shall be a 6mm layer of cross linked closed cell polyethylene, designed specifically for underfloor heating.

Radiant Floors Part Number: LAMFOAM.

LAMFOAM can be fixed to the floor with a light duty spray adhesive.

Electrical Requirements

It is recommended the installation is carried out in accordance with local electrical regulations and the wiring of the system to the mains electrical supply is performed by a qualified electrician. **Wiring and circuit protection to be compliant with BS7671 - 2008**

The heating system is designed for operation at 230V 50Hz.

All installations require a 30mA RCD (residual current device) for safe operation.

Make sure the total current (amps) of your RFLAM system and other appliances connected to the circuit do not exceed the current capacity of the circuit. Normal ring main circuits are rated at 13A and the electrical feed can be taken from a 30mA RCD via a 13A fused spur.

The RFLAM thermostat has a 16A maximum rating. When the total load of your RFLAM system exceeds 3500 watts (25m² system) use a contactor to switch the electrical load, or alternatively split the heating into more than one heating zone each operated by its own thermostat – always consult your electrician.

Part Number	Heated Floor Area (m ²)	Heating Mat(s) Required	Total Watts	Amps	Total Mat(s) Resistance (ohms)
RFLAM-280	2	RFLAM-280	280	1.22	188.93
RFLAM-420	3	RFLAM-420	420	1.83	125.95
RFLAM-560	4	RFLAM-560	560	2.43	94.46
RFLAM-700	5	RFLAM-700	700	3.04	75.57
RFLAM-840	6	RFLAM-840	840	3.65	62.98
RFLAM-980	7	RFLAM-980	980	4.26	53.98
RFLAM-1120	8	RFLAM-1120	1120	4.87	47.23
RFLAM-1260	9	RFLAM-1260	1260	5.48	41.98
RFLAM-1400	10	RFLAM-1400	1400	6.09	37.79
RFLAM-1680	12	RFLAM-1680	1680	7.30	31.49
RFLAM-1960	14 *	RFLAM-980 + RFLAM-980	1960	8.52	26.99
RFLAM-2100	15 *	RFLAM-980 + RFLAM-1120	2100	9.13	25.19
RFLAM-2240	16 *	RFLAM-1120 + RFLAM-1120	2240	9.74	23.62
RFLAM-2380	17 *	RFLAM-1260 + RFLAM-1120	2380	10.35	22.23
RFLAM-2520	18 *	RFLAM-1260 + RFLAM-1260	2520	10.96	20.99
RFLAM-2660	19 *	RFLAM-1400 + RFLAM-1260	2660	11.57	19.89
RFLAM-2800	20*	RFLAM-1400 + RFLAM-1400	2800	12.17	18.89

* Aterisk denotes two (2) mats are used to heat the heated floor area

In bathrooms the thermostat control should be mounted outside the bathroom.

THE HEATING CABLE MUST NEVER BE CUT

To facilitate installation the cold lead wire can be cut to suit.

FLOOR PREPARATION

Wooden Subfloors – timber floorboards and chipboard. Make sure any loose boards are firmly fixed and reinforce the floor if necessary to prevent any movement in the floor.
The floor should be level.

Reinforcement can be applied to the floor by covering the complete floor with 18mm WBP plywood (weather & boilproof plywood).

Concrete Subfloors – Before proceeding repair any imperfections in the floor and level the floor with approved building materials.

Wooden & Concrete Subfloors - Clean the floor surface so that it is free from dust, dirt, grease etc.

Prime floors to improve bonding between the LAMFOAM insulation and the base floor.

First Step

Plan the installation.

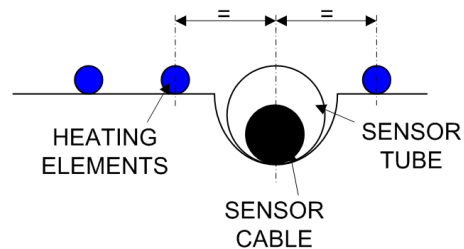
Draw a general view of the room and mark the area which will be covered with heating elements showing the placement of the mats, thermostat, floor sensor and any junction boxes. Avoid heating under units and sanitary ware as this can cause heat blockage and it is unnecessary to heat these areas anyway.

Plan to use the larger RFLAM mats as much as possible to heat the required floor area.

Mark the position of the cold lead wire(s), at floor level. The cold lead joint is slightly thicker than the rest of the mat. Ensure the cold lead joints are embedded in the floor insulation / floor so that they are level with the rest of the mat.

When positioning the sensor it need only project into the room by 500mm. Make sure the sensor is placed at the opposite end from the heating wire loop. The sensor and sensor cable must not touch or be crossed by the heating element.

The sensor must run centrally (in the middle) between two runs of heating element so it is important to note where the elements will be positioned when installing the sensor. When installing a sensor tube make sure it is level with the heating element as shown below.



The tube can be cut to length to suit. Seal the end of the tube.

Floor Insulation

The underlay must be applied to the floor before the RFLAM underfloor heating. The underlay (floor insulation) shall be LAMFOAM, a 6mm layer of cross linked closed cell polyethylene.

LAMFOAM has been tested and chosen specifically for underfloor heating. It has excellent fire retardant properties, compression strength, thermal conductivity and working temperature range (-60 / +90°C). LAMFOAM also has excellent sound deadening properties.

Radiant Floors Part Number: LAMFOAM.

LAMFOAM is rolled out onto the subfloor (concrete or wooden) using a spray adhesive applied around the edges to assist the laying process prior to fitting the RFLAM mats. Remember to prime the sub-floor prior to fixing LAMFOAM.

Testing

IMPORTANT: Before and during installation resistance continuity tests are necessary. Also, measure the insulation resistance value - the minimum reading should be 10Mohms regardless of the mat size. **All tests to be carried out in accordance with BS7671.**

- Test before installing, immediately after installing and before putting the heating into operation.

Consult a qualified electrician.



A digital multimeter is ideal for testing cable continuity and the resistance (ohms), as well as the resistance of the sensor cable.

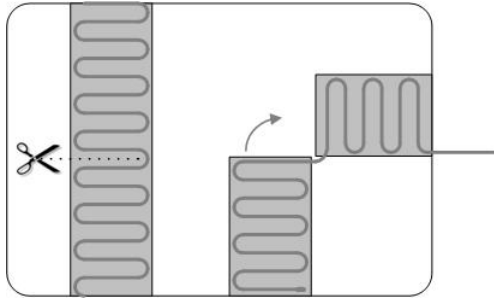
Insulation resistance readings should also be carried out as required by BS7671.

Mat Layout & Fixing

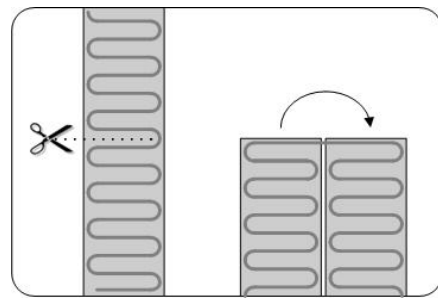
RFLAM mats must be fitted directly on top of the underlay (floor insulation), and directly under the laminate flooring – no screeds or additional materials are required.

Planning is important and when calculating the heated floor area leave a minimum unheated gap of 100mm around the room perimeter. The heated floor area must be free, avoid heating under kitchen cabinets, sanitary ware and appliances.

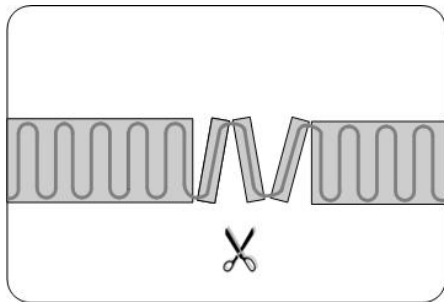
Make sure the RFLAM system can fit the floor area to be heated. It is better to have too little than too much over. **Remember, NEVER cut the heating element.** Cut only the element carrier (aluminium), and turn / flip the mat to meet your requirements as shown in the small illustrations below. Cut across the mat width centrally between two runs of heating element.



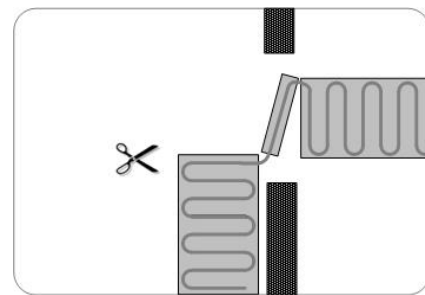
OPEN CORNER



PLAIN WALL CUT



STRETCH TECHNIQUE



DOORWAYS

WARNING: NEVER CUT THE HEATING ELEMENT

The position for the thermostat should be decided at the initial planning stage.

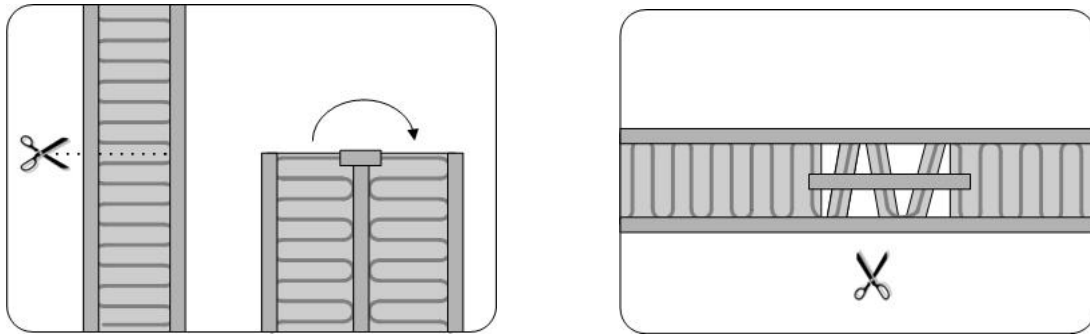
Check that the cold lead wire for the mat(s) will reach the connection – this is the connection with the junction box (depending on the number of mats) OR direct to the thermostat. When installing more than two mats the use of a junction box is recommended.

Arrange the mat on the floor, roll out and make the appropriate cuts. Make sure the mat is the correct way up. The exposed heating element loops **MUST** be on the underside of the mat when the mat is laid onto the insulation. The side marked “THIS SIDE UP” is facing upwards.

The RFLAM system is supplied complete with aluminium foil adhesive fixing tape. The mats are installed flat and fixed to the underlay with the foil fixing tape – see illustrations. **When a mat has been cut and turned, or cut as in the stretch technique shown, the wire must be covered with aluminium foil fixing tape, so that you bridge the gap between sections of mat.**

This is required to ensure the mat maintains its ground circuit throughout the mat.

Electrical cold leads must not cross each other or cross over the mats.



FIXING WITH ALUMINIUM FOIL ADHESIVE FIXING TAPE

Electrical Connections

When installing more than one mat mark the blue and brown leads coming from each mat with the same number for identification purposes. For example, MAT 1: mark both the blue & brown leads with 1, MAT 2: mark both the brown & blue leads with 2 etc.

If in any doubt please contact Radiant Floors for support – 01254 824 234

Reminders

- Do** – read the instructions
- Do** - use the right size of mat(s) and only apply the mat to the area to be heated
- Do** - consult a qualified electrician
- Do** - make sure the heating is connected to an RCD rated 30mA maximum.
- Do** - make sure the cold lead joint is in the floor beneath the laminate / wooden flooring.
- Do** - keep a record of where the floor probe is positioned and the general layout of the heating mats for future reference.
- Do** – use the recommended underlay / floor insulation – LAMFOAM
- Do** - ensure the earth leads are connected to the earth circuit
- Do** - ensure that the total current (amps) of all mats when connected together in parallel is not more than 80% of the capacity (amperage) of any junctions box, power supply wiring and breaker. Seek advise from your qualified electrician.
- Do Not** - overload circuits – consult your Electrician
- Do Not** - cut the heating element
- Do Not** - cross or touch heating elements
- Do Not** - cross cold leads, electrical supply cables or sensor cable over the mats
- Do Not** - drop sharp tools or heavy objects on top of the mats
- Do Not** - use wooden floors that have metallic clips as part of their locking system as these metallic strips may damage the RFLAM mat.
- Do Not** - connect any other electrical appliance on the same fused spur or RCD of the heating system
- Do Not** – install RFLAM mats below 0°C ambient temperature
- Do Not** - overlap heating mats
- Do Not** - crease or fold the RFLAM heating mats
- Do Not** - Create a heat blockage on the floor with bean bags or similar furniture.
- Do Not** - RFLAM must not be installed in screeds, or in direct contact with the sub floor. LAMFOAM underlay must always be used with RFLAM mats.
- Do Not** - use RFLAM under any floor covering other than laminate or engineered wood.
- Do Not** - install RFLAM under floors with a thickness greater than 18mm
- Do Not** - walk unnecessarily on the RFLAM mats. **WARNING:** once the mats are installed it is important to avoid traffic over the mats until the floor has been laid. If the floor is not being installed immediately, RFLAM mats should be protected with layers of cardboard or hardboard to prevent damage.
- Do Not** – place RFLAM on top of other in-floor radiant heating systems (i.e. hydronic or in-screed systems), unless the other system is permanently disconnected.

Support

- a. Eltrace / Radiant Floors deliver next day carriage free
- b. With a simple request, our technical / design team work to your floor plans, or scale the floor sizes from a set of architects plans. Please include phone, fax numbers, email address.
- c. Fax to 01254 825 212 or FREE phone 0800 211 8249 for Design help.
- d. email: sales@eltrace.co.uk or sales@radiant-floors.co.uk



GUARANTEE CERTIFICATE

Unit 14, The Sidings Business Park, Whalley, Lancashire, BB7 9SE
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RFLAM Underlamine Foil Heating Mat System

Please complete and return this installation certificate within 30 days to
Eltrace / Radiant Floors and keep a copy to validate the lifetime guarantee

Customer:

Address: Phone:

Type of room:

RFLAM size(s) – Part Number(s)

Installers Name:

Purchased from: Date of purchase:

Initial Resistance test (continuity) (ohms)

Insulation Resistance:

Signed by electrician / installer:

Date:

Resistance test prior to laying laminate / wooden floor(ohms)

Insulation Resistance – prior to laying laminate :

Signed by electrician / installer:

Date:

Final Resistance test (continuity)(ohms)

Final Insulation Resistance:

Signed by electrician / installer:

Date of completion:

