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BNTMLH02

# LH Heating Elements Under Laminate Flooring Systems

## INSTALLATION AND OPERATING INSTRUCTIONS

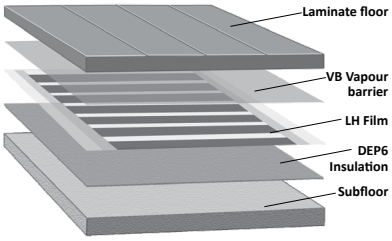
### 1) Introduction

#### The LH Heating Element

LH consists of a specially formulated semi-conductive medium, coated onto polyester film. Power is fed to this resistive coating by way of copper conductors that are fixed to the longitudinal edges of the heating areas. This structure is insulated by a lamination of polyester based films that totally cover the element and is wider than the conductive heating area, forming strong clear edges that are designed to accept subsequent fixing to sub floor surfaces.

Low temperature LH floor heating elements produce a gentle heat that evenly warm the entire room.

**LH heating element is supplied fully prepared, cut to size, tails fitted and insulated ready for installation. LH heating element should be installed by a certified electrician and in accordance with the latest IEE Regulations. It is not a 'do it yourself' product. LH is not suitable for installation in wet rooms or bathrooms.**




### 2) Installation Procedure

Before commencement of installation always check on the following: The building is weather tight, and that the glazing and doors have been fitted.

Any floor screeds, asphalt etc. have been laid and allowed to dry out. All electrical first fix wiring and other mechanical services through floors have been completed

No cables must be allowed to come into contact with the LH heating elements

### 3) Planning the Installation

Draw a plan of the floor identifying areas occupied by fixed furniture such as kitchen cabinets (heating elements should not be installed in these areas). Draw the heating elements on to the plan taking the following points into consideration.

For best value, use a small number of long elements rather than a larger number of short elements (remember element lengths can be reduced on site if necessary). Whenever possible keep the element ends fitted with the live and neutral cables along one wall. This should be the same wall on which the thermostat is fitted.

A minimum gap of 50mm should be maintained between the wall and the edge of the heating element. When a number of elements are being used this distance may need to be increased slightly to allow space for the cable to run to a junction box.

Remember that small reductions in length can easily be made on site.

For the most even heat distribution the elements should lay side by side with no gap between them. Double-sided tape may help to hold the elements in place. Small gaps between the elements will not significantly affect the efficiency of the system. It is essential that neither the copper conductors nor the black carbon stripes are allowed to 'overlap'.

An element can be trimmed in length by cutting carefully width-ways between the black stripes. Trimming the element will expose the ends of the two copper conductors. These exposed ends should be insulated.

NOTE: Although all LH element is visually inspected at the factory before dispatch the elements should be checked to ensure any rough handling has not damaged the LH element. Look for creasing or folding of the product that could have been caused by a roll of element being trodden on. Any such damaged areas must be discarded and replaced. Check that the connections at the end of the rolls have not been damaged. The connections should be firm not loose.

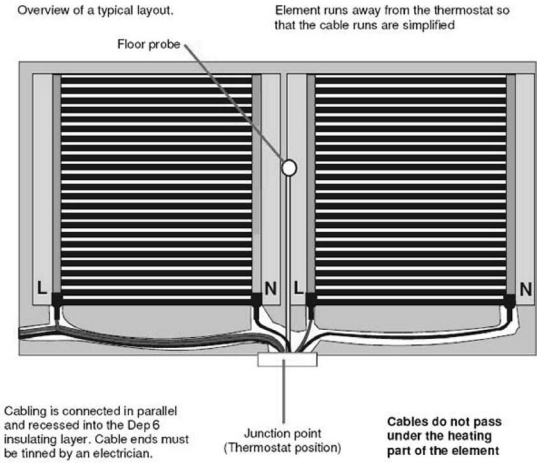
**4) How to lay the film and connect it to the grid.**

Before laying the film, lay out a 6mm layer of Dep6 insulation. The edges of the Dep6 sheets may be taped together to prevent them 'Riding Up'. The layer of insulation also acts as sound deadening that is a requirement for laminate floors.

Locate the suitably fused, low level, junction box. Create channels in the Dep6 insulation to accommodate the return of the cables to the junction box and a channel for the floor probe (floor probe supplied with thermostat). Run the element away from the junction point with the end that the cables are attached to being closest to the junction point.

Always lay the film with the bright copper strip facing down.

The floor probe should be positioned in between element strips and should be placed at least 1 metre away from the wall. When you have a good idea where the element will be positioned cut a channel in the insulation for the probe to fit into. Never have the probe positioned under the heating part of the element. Never lay the strips of film in such a way that their heating surfaces overlap or that non-heating cables pass under the element. You can fix the element strips in place using tape.



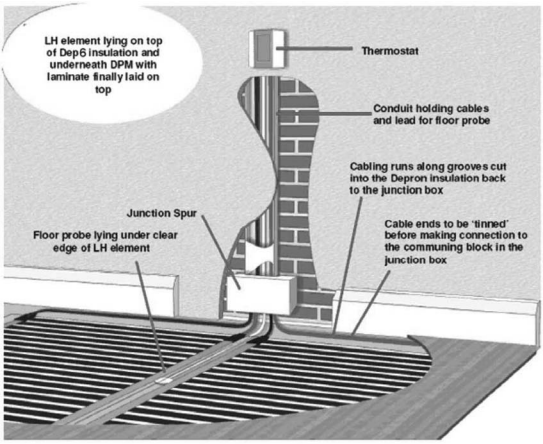

**Note:**

Individual cables should be fed back to local low-level fused spur termination boxes and planned not to exceed the 10 amp element rating.

If all the circuits are functioning satisfactorily, lay VB on the whole floor surface. The individual sheets must overlap by at least 20cm.

**5) Electrician Requirements**

Connection to the mains must be via a 30mA RCD.




**5a) First Resistance Check**

Once all the strips are laid and interconnected check the resistance value of each circuit using an ohmmeter applying the formula:

$$\frac{52900}{\text{Watts}} = \text{Resistance (ohms)}$$

**5b) Thermostat**

The thermostat should be sited 1.5m from the floor level, directly above the element termination box(es) and away from the local heat sources and large windows. A cable must run from the junction box to the 'common' and 'normally closed' terminals of the thermostat.

NOTE: Should the total connected load in any area exceed the rating of the controller the electrician should provide a suitable switching contactor (normally located adjacent to the distribution board) with a switching feed to the controller. An option is to fit two controllers, however this may create a temperature imbalance and is generally avoided.

**5c) Electrical considerations with reference to wiring from the room thermostat to heating elements.**

1.5mm2 double insulated cable must be used for making up wiring harnesses. To satisfy the requirements of an acceptable British Standard sheathed single core cable to BS. 6004 would be acceptable.

**6) Laying a floating floor**

The laminate floor must be laid according to the manufacturers recommendations. When laying a floor you must take special care not to damage the element and the supply cable. Walking on the LH element must be kept to a minimum. When walking on the element cannot be avoided soft-soled shoes must be worn.

**7) Second Resistance Check**

Once the laminate has been laid check the resistance of the total circuit using an ohmmeter and record the result on the installation record form.

**8) Warranty**

Assuming correct installation, LH elements will give many years of satisfactory service. In the unlikely event of a malfunction resulting from faulty manufacture, the systems are guaranteed for a period of 10 years from date of purchase. The guarantee covers the full purchase price but not the cost of repairing or replacing the heater in the floor. An installation record form is supplied with each set of elements. This should be completed at the time of installation and posted to BN Thermic within 30 days of installation.

Warranty claims will note be considered if the form has not been returned to us within the required time. Control devices carry the manufacturers 1 year warranty only.

# LH Installation Record Form

**Please complete this form at the time of installation and post to BN Thermic within 60 days of installation. We strongly advise you to retain a copy for your records. Warranty claims will not be considered if the form has not been completed and returned to us within the required time.**

| | |
|---|---|
| Name of property owner | |
| Address | |
| Telephone number | |
| Purchased from:<br>(Name and location of Wholesaler) | |
| Date of purchase | |
| Name of company who installed the system | |
| Installer's telephone number | |
| Date of installation | |
| Date the system was energised | |
| LH Model & Quantities | |
| Model number of controller | |
| Room (bedroom, kitchen etc) | |
| Dimensions of room, excluding permanent fixtures such as cupboards and baths. (if the room is of a complex shape you may prefer to make a dimensioned sketch and attach it to this form) | |
| Surface on to which the heating cable or mat was laid | |
| Type of floor surface | |
| Thickness of floor surface | |

**Electrical Checks – Refer to the Installation Instructions**

| | |
|---|---|
| First electrical check | |
| Resistance (ohms) | |
| Insulation resistance (meg-ohms) | |
| Second electrical check | |
| Resistance (ohms) | |
| Insulation resistance (meg-ohms) | |
| Third electrical check | |
| Resistance (ohms) | |
| Insulation resistance (meg-ohms) | |

Assuming correct installation, BN Thermic underfloor heating systems will give many years of satisfactory service. In the unlikely event of a malfunction resulting from faulty manufacture, the systems are guaranteed for a period of 10 years from date of purchase. The guarantee covers the full purchase price but not the cost of repairing or replacing the heater in the floor. Control devices carry the manufacturers 1 year warranty only.