

# harmoni

INSTALLATION MANUAL

## Harmoni Aluminium Spreader Plates

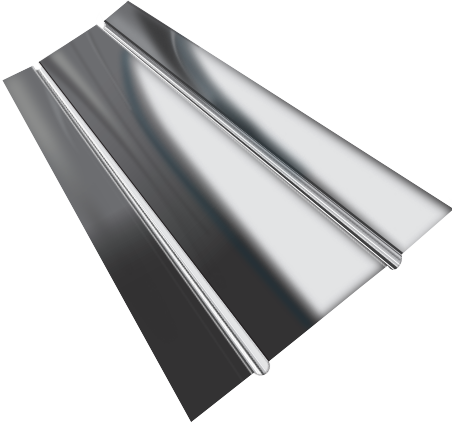


Before you begin installing, read through these instructions carefully and make sure all components are in the box.

[www.harmoniheating.co.uk](http://www.harmoniheating.co.uk)

**01473 559088**

# ALUMINIUM SPREADER PLATE



## Introduction

Harmoni grooved aluminium spreader plates are laid between floor joists or battens. They are designed such that, when the substrate is laid over the battens or timber joists, the floor will be in direct contact with the aluminium spreader plates, ensuring an effective transfer of heat into the room. Spreader plates are available with 133mm or 200mm centres, with dimensions of 1000mm × 390mm. The boards have 2 or 3 integral grooves to allow for a 16mm pipe laid at 150mm or 200mm pipe centres, with the option to be easily trimmed on site.

## Technical Installation

**PIPE OPTIONS** 16mm

**BOARD SIZE** 1000mm × 390mm, thickness 0.3mm

### INSULATION

Provided by others - In accordance with Part 'L' of the current Building Regulations, a suitable layer of insulation material should be included within the floor construction. It is the responsibility of the Architect or Builder to ensure compliance. However, in all instances insulation must be installed beneath the underfloor heating system in order to ensure that any downward heat loss does not exceed 10W/m<sup>2</sup>, in accordance with BS EN 1264. This insulation also supports the aluminium spreader plates.

## Suitability

A full suspended floor solution for use in suspended floors.

### Features & benefits

- Provides ready made pipe securing & spacing using pre-grooved spreader plates
- Can be installed within battens or timber joists
- Suitable for joist or batten spaced at 400mm centres
- Typical Outputs 49W/m<sup>2</sup>
- 1000mm × 390mm with a thickness of 0.3mm
- Rigid insulation must be installed beneath the spreader plates on battens to support the spreader plates



**Before installing your underfloor heating system, you MUST ensure you are happy that the system is fit for your purpose, and that the designs are strictly followed. Please call the office on 01473 559088 for further advice if you are unsure.**

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|                           | Tiles  | Wood Floor | Carpet 1.5 TOG Max |
|---------------------------|--|------------|--------------------|
| Flow / Return Temperature | Heat output W/m <sup>2</sup> .<br>Based on 133m spacings |            |                    |
| 50 / 45                   | 71   | 59         | 43                 |
| 45 / 40                   | 55   | 43         | 36                 |
| 40 / 35                   | 40   | 31         | 26                 |
| 35 / 30                   | 25   | 20         | 17                 |



**Pipe Layout Suitability**



**NOT ALLOWED AS PER BS EN 1264**

\*\*Typical heat outputs based upon BS EN 1264 20°C room temperature, delta t5 - Due to the variability of parameters that effect the heat output of an underfloor heating system, i.e. flow temperature, pipe spacings, floor covering and design conditions. Please contact a true representation of the system outputs.

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## Step 1

Fix a suitable batten to either side of the joist. Then place a minimum of 50mm rigid insulation board (such as Kingspan or Celotex) on top of the battens. This will support the spreader plate ensuring the top of the spreader plate is positioned level with the top of the joists.

### **WARNING!**

Please ensure all of the aluminium spreader plate surface is in 'direct' contact with the floor above to ensure the heat is transferred efficiently.

Air gaps act as insulators and reduce the heat transfer effect.

## Step 2

Place a spreader plate onto the joist, ensuring that you leave a minimum space of 250mm from the wall to allow notch in joist. Ensure your pipe layout diagram is accurate and check manifold locations are correct. Screw or Nail the spreader plate to the joist. Due to the nature of the spreader plate suspended floor system, there may be alterations to the design and changes may need to be applied during the installation phase.

## Step 3

Continue to lay the spreader plates on the joists ensuring that you have a minimum of a 5mm gap between the ends and edges of the spreader plates.

At no point must the spreader plates overlap.

## Step 4

In areas where there are no requirements for underfloor heating pipework, fill the joist with some insulation boards.

## Step 5

Lay the pipe from the chosen manifold location in a serpentine pattern within the preformed grooves. Read the floor plan layout and check the joist layout on site. Joists may need to be notched to be able to complete the circuits.

### **IMPORTANT!**

All notching and drilling must conform to building regulations Part A.

## Step 6

Upon completion of the underfloor heating pipe circuits - ensure all pipe work is pressure tested (conforming to BS EN 1264).

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## Flushing the System

1. Once all of the circuits have been completed, and all connections are tight, connect a suitable hose to the upper and lower drain valve on the right hand side of the flow and return manifold.
2. Connect the lower drain valve to the cold water fill. Ensure both the red and blue isolators are closed and all flow meters and the white lock shields are closed. Working from the left, open up the flow meter and corresponding lock shield valve for the first circuit. With all of the remaining circuits closed, open up both drain valves. You are now ready to flush out the first loop. Visually check the water coming out of the hose into a suitable drain. Ensure the water flows freely without any bubbles.
3. Repeat the process on the remaining circuits. **IMPORTANT!** When each loop has been flushed correctly, ensure that both the lock and shield and the flow meter are closed. When flushing the underfloor heating system, only 1 loop at a time should be open.

## Pressurise the System

Once all of the loops are flushed and air has been removed, the system must be pressurised to a minimum of 4 bar; using a suitable pressure tester such as a Rothenburger. Open all of the circuit lock shields, along with their subsequent flow valves, and close off the upper drain valve on the right hand side of the manifold. Connect the pressure tester to the lower valve, and raise the pressure to minimum 4 bar.



## Testing Period

We recommend holding the system at 6 bar pressure for 1 hour. The pressure gauge may drop even though there are no leaks. This is due to the temperature change of the water. Generally in 1 hour you will recognise a leak. **IMPORTANT** make sure a suitably responsible person witnesses the pressure test, and signs to say the test was successful. Make sure you carry out a thorough visual inspection of all the pipework before you leave site.



Please confirm with the floor covering manufacturer that is is suitable for underfloor heating. BS EN 1264 advises that, in occupied areas the floor temperature **MUST** not exceed 29°C, however it also states that, when using timber floor coverings then ensure that this surface temperature does not exceed 27°C.

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## Floor Coverings



### Tiles

A suitable structural plywood or screed board should be installed on top of the joists. An antifracture or decoupling mat can then be installed prior to installing tiles to avoid the risk of movement. Please consult a tiler for professional advice.

### Carpet & Underlay

The laying of the carpet and underlay can be fitted direct to the chipboard / Plywood floor. Please ensure that the TOG value of the carpet and underlay is below 2 TOG combined. Bear in mind that the lower the TOG value, the more efficient the underfloor heating will be.



### Engineered Laminate

Engineered and Laminate floors can be applied direct to the finished structural chipboard or plywood. For best results you should glue the wood floor down instead of using an underlay.

### Linoleum & Vinyl

When applying a lino and vinyl finish to the floor, a completely flat surface is required. Typically, a 10mm intermediate dry screed board, or a 6mm ply board may be applicable. Please consult your floor covering manufacturer.





# CONTACT DETAILS

If you have any questions please call our helpline on 01473 559088

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