

# harmoni

INSTALLATION MANUAL

## Harmoni Eggcrate

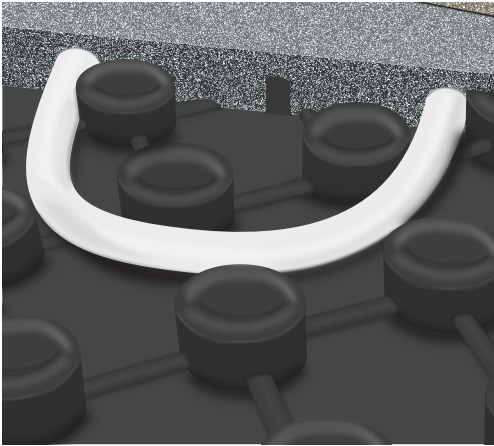


Before you begin installing, read through these instructions carefully and make sure all components are in the box.

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

**01473 559088**

# HARMONI EGGCRATE



## Introduction

**Harmoni Egg Crate utilises a screed or concrete to transfer the heat from the pipes to the finished floor level above, and once up to temperature, delivers sufficient heat output to provide warm and even ambient temperatures within the living space.**

The best floor covering to use with underfloor heating are hard surfaces, such as, stone and tile. These floor coverings offer the least resistance which transfer heat more effectively than with a carpet finish. For floor coverings such as carpet, the system design must factor in the extra heat output that will be needed; this loss in output needs to be negated by increasing the flow temperature.

## 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 lost does not exceed 10W/m, in accordance with BS EN 1264.

### Pipe Options

16mm Pe - RT/Al /Pe -RT

### Board Dimensions

1450mm x 850mm x 21mm (W x L x D)



**THE UNDERFLOOR HEATING SYSTEM SHOULD NOT BE BROUGHT INTO SERVICE FOR AT LEAST 21 DAYS. After this time the water temperature should be brought up gradually by 5 °C per day to the maximum working temperature (normally 45 °C, internal pipe temp). If you are in any doubt about any part of the installation process, then call us for advice on 01473 559088**

# HARMONI EGGCRATE

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## Step 1

Lay your insulation boards, covering the whole floor followed by a suitable vapour barrier. Install the supplied 8mm expansion foam roll around the perimeter wall of the room. Ensure the vapour barrier covers the perimeter insulation to prevent screed coming in contact with any insulation installed.

## Step 2

Cover the whole floor with the interlocking ProCrate, ensuring they are overlapped such that no screed can escape to the insulation below

## Step 3

**IMPORTANT!** Refer to the CAD design. Lay the pipe from the chosen manifold location in a serpentine or spiral coil pattern, and secure within the dip-Rails at pre determined pipe centres

## Step 4

Continue until all circuits are laid

## Step 5

Pressure test every circuit and maintain under pressure during the screed laying process

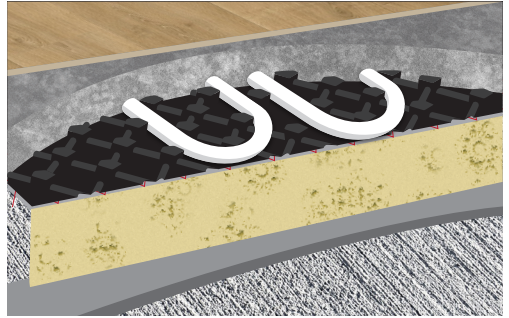
# HARMONI EGGCRATE

## Suitability

Suitable for screed systems when an insulation board is present.

### Features & benefits of using Egg Crate installation

- Provides ready-made pipe securing & spacings
- Can be used with traditional & liquid screeds
- Suitable for all pipe work layouts
- Good for large regular shaped area
- Can be installed over alternatives surfaces
- Degree of protection from foot traffic whilst screed is being laid
- Typical outputs 85 W/m<sup>2</sup>
- 1450mm x 850mm x 21mm (L x W x D)



**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.**

All pipework must be checked for kinks and damage during the installation. If the pipe work is damaged then you MUST replace the coil. It is a requirement that all joints under the floor are accessible.

No underfloor heating system must be used to dry a screed.

Please confirm with the floor covering manufacturer that it 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 ensure that this surface temperature does not exceed 27°C.

# HARMONI EGGCRATE

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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 6 bar; using a suitable pressure tester such as a Roth-enburger. 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 6 bar.



## Testing Period

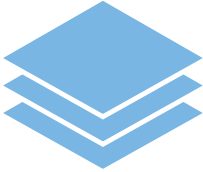
We recommend holding the system at 6 bar pressure for 1 hour. The pressure gauge may drop even though there are no leaks. This is due to the temperature change of the water. Generally in 1 hour you will recognise a leak. **IMPORTANT** make sure a suitably responsible person witnesses the pressure test, 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.

# HARMONI EGGCRATE

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## Floor Coverings

Screed floors can be covered with a multitude of finishes. Please ensure that the subfloor is prep to flooring manufacturers guidelines. Please note if liquid screeds are used you must scarify and remove laitance from surface before any finishes are laid.



### **Ceramic tiles, Slate, Stone etc**

Prime Screed with Ultra MSP and allow to dry. Once Dry use a full bed of Ultra Proflex SP to bond tiles to subfloor. Allow a minimum of 10 days before turning system on.

### **Carpet & Underlay**

Ensure the floors are as flat as possible before installing any carpets and underlay. Harmoni recommend the carpet and underlay combined does not exceed 2.5tog.



### **Engineered Laminate**

Engineered and Laminate floors can be applied direct to the screed finish however if the floors are uneven a leveling compound can be used. Care needs to be taken when selecting the thickness of the engineered or Laminate wood floor, as the thicker the board, the lower the available heat output. Harmoni recommend a maximum thickness of 18mm on top. If floor manufacturers recommend an underlay then please ensure this does not exceed 1.0tog.

### **Linoleum & Vinyl**

When applying a lino and vinyl finish to the screed, a completely flat surface is required. Typically, a thin layer of self-levelling compound can be applied. Using this method will improve the efficiency of the underfloor heating system.



Please confirm with the floor covering manufacturer that it 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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Flow / Return Temperature	100mm Pipe Centre			200mm Pipe Centre			300mm Pipe Centre		
	Tile	Wood	Carpet	Tile	Wood	Carpet	Tile	Wood	Carpet
35 / 30	80	46	38	60	38	33	45	31	27
40 / 35		65	53	85	53	46	63	43	38
45 / 40			68		68	59	82	55	49
50 / 45			83			72		67	59

**NOT ALLOWED AS PER BS EN 1264**

\*\*Typical heat outputs based upon BS EN 1264 200C room temperature delta t 5 - Due to the variability of parameters that effect the heat output of an under floor heating system -i.e. flow temperature, pipe spacings, floor covering and design conditions, PLEASE contact the technical department on 01473 559088 to confirm a true representation of system outputs.

## Engineered Laminate

For heating screeds that are to be covered with a floor covering such as tile or stone, the area must not exceed 40m<sup>2</sup> or a maximum length of 5m. If these are exceeded, than an expansion joint must be fitted. When laying the underfloor heating pipework, only connecting pipes are allowed to pass through expansion joints. However, these pipes must be sleeved with a flexible insulating tube, which then spans the expansion joint by 0.3m in length.

## Linoleum & Vinyl

The initial heating of a screed must not be commenced until 21 days has elapsed. However, for a calcium sulphate screed, this time may be reduced to 7 days (check with screed manufacturer first). The initial flow temperature that is to be applied to the screed, must be between 20°C and 25°C. This must be maintained for at least 3 days. Following this, increase temperature by 5 degrees per day until design tempereure is achieved, then maintain design temperature for 4 days after.

## Installation Tips

### Laying of Screed

Upon laying the screed, the temperature of the room and the screed need to be greater that 5°C

# CONTACT DETAILS

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

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Packed with affordable heating solutions for your entire home, you'll discover energy efficient, intuitive and well-designed practical radiators, thermostats, underfloor heating with cutting-edge technology at the heart of every product.

Available from the Downloads section at [harmoniheating.co.uk](http://harmoniheating.co.uk)



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