

SNUG

UNDERFLOOR HEATING

CASTELLATION MAT SYSTEM

INSTALLATION GUIDE

A DIVISION OF



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CASTELLATION MAT SYSTEM - INSTALLATION GUIDE

INTRODUCTION

Our Snug Castellation Mat system makes installing underfloor heating on PIR insulation simple. Ideal for installations when screed has not yet been laid.

REQUIRED TO FIT

To successfully install our Snug Castellation mat system, you'll require:

- Rubber Mallet: To insert staples

IMPORTANT INFORMATION

Upon receiving the system, ensure it is stored in a dry, weather-tight area, shielded from direct sunlight, and away from sharp objects and hazardous chemicals to maintain its integrity.

Furthermore, confirm that the existing slab meets at least SR2 requirements for floor regulations, with SR1 being preferable for optimal performance. This foundational step sets the stage for a successful installation.

STEP ONE: PREPARATION

Begin by covering the perimeter of the room with a 25mm thick PIR upstand. The height of the upstand should match the planned height of both the insulation and screed together. Lay the insulation in strict accordance with building regulations. Ensure that the insulation is positioned tightly against the previously laid expansion foam, leaving no gaps.

Then start to lay the edging strip around the perimeter of the room. Ensure that the visqueen tongue, a crucial element of the system, is facing into the room. Additionally, take care to position the visqueen tongue of the edging strip on top of the insulation.

Unlike Staple and Clip Rail systems, Damp Proof Membrane (DPM) is not required however it is still recommended. If you choose to use the DPM - Cover the insulation with a DPM. Tape it securely to the insulation, ensuring thorough coverage. Take special care to tape down the edging strip's visqueen tongue on top of the DPM. This essential step prevents any chemical reaction between the screed and insulation, which can result in air pockets within the screed.

WARNING

When working with wood or insulation products, airborne dust and hazardous particles may pose health risks. Use protective equipment, maintain ventilation, and employ dust control methods for your safety.



Consult the screed supplier/manufacturer for specialist screed preparation and specific requirements.

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STEP TWO: LAYING THE CASTELLATION MATS

Fix down castellation mats to the insulation using the staples provided, this stops the mats from being lifted by the pipework. Castellation mat apices have pre-set spacings of 100mm between each apex on the same row (Fig. 1).

STEP THREE: LAYING THE PIPEWORK

Using the unique Snug drawing provided, proceed to lay the pipework to and from the manifold at the appropriate centres. For guidance you can pre-mark the castellation mats.

The pipework will be designed in a spiral pattern where possible for an even and more efficient heat output. (Fig. 2). Please read page 5 for more information.

Repeat this process for all loops of the system until they are all laid, ensuring a thorough and consistent installation.



Ensure that the ambient temperature during pipe installation is at least +5°C.

STEP FOUR: PRESSURE TESTING

After installing all of the pipework, it is crucial to perform a thorough pressure test before proceeding with the screeding process. Refer to our Pressure Test Guide, available on our website, for detailed instructions.



For any damaged or kinked pipework during installation, we highly recommend a complete loop replacement, alternatively, you can use a Snug Repair Kit however this does void warranty. If a repair is undertaken, ensure accessibility post-screed and finished floor completion.

Fig. 1

ILLUSTRATION PURPOSES ONLY

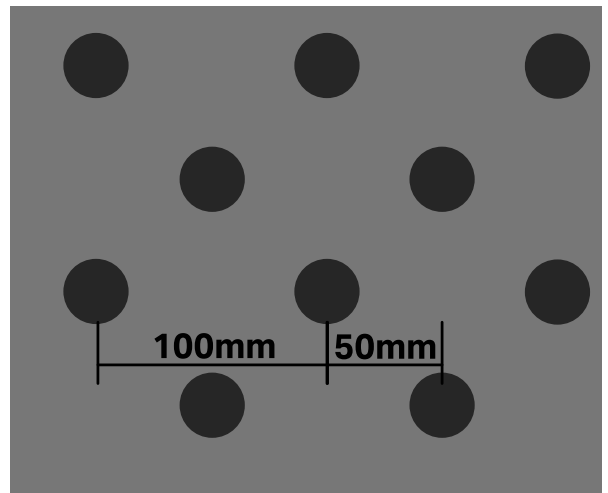
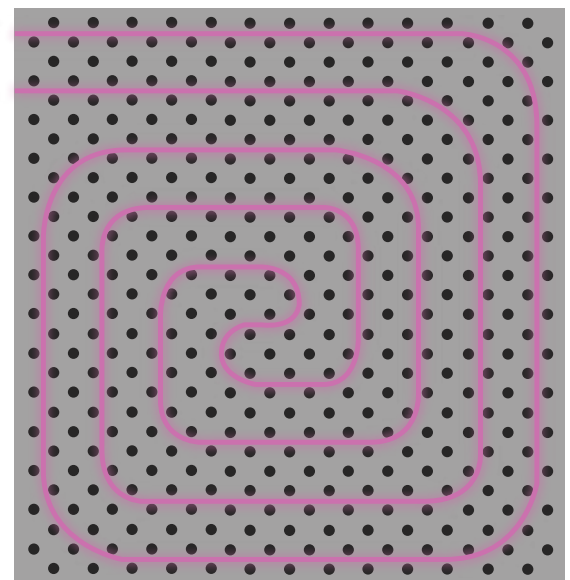


Fig. 2

ILLUSTRATION PURPOSES ONLY



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STEP FOUR - SCREEDING INFORMATION

During the screed laying process, you must keep the system pressured, maintaining a minimum of 3 bar, using water instead of air.

Before activating the underfloor heating system, it is essential to allow the concrete or screed to fully cure. Operating the system prematurely may compromise the moisture content, risking floor failure.

Initiate the first warm-up at least 30 days after cement screed application or in line with the manufacturer's instructions. During this phase, set the mixing valve to supply a temperature between 20°C and 25°C, maintaining it for a minimum of 3 days.

Following this, gradually increase the flow temperature in increments to the designed maximum, holding it for an additional 4 days.

EXPANSION JOINTS

When incorporating expansion joints in heating screeds intended for stone or ceramic coverings, adhere to the following guidelines: Joint areas should not exceed 40m² with a maximum length of 8m.

In rectangular rooms, joint areas can surpass these dimensions, but the maximum length should be in a 2 to 1 ratio. If induced contraction joints are placed in heating screed, these may be cut to a depth not exceeding one-third of the screed thickness, considering the location of the pipes. Ensure these joints are sealed after heating up to maintain the system's effectiveness and durability.

WOOD FLOORING

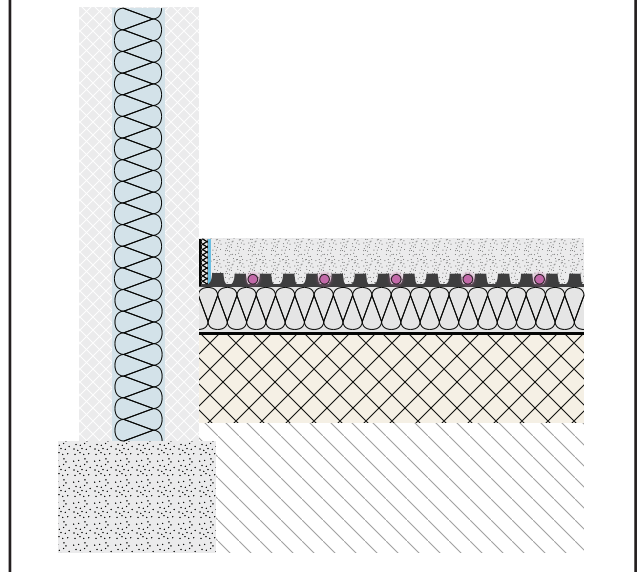
When installing hardwood floors, ensure the timber has a moisture content of 8-10%. It's essential to verify with the flooring supplier that the chosen floor is compatible with underfloor heating.

For tongued and grooved joints in the floor, use PU adhesive or a PVAc adhesive compliant with durability D3 of BS EN 204. Maintain a minimum 10mm gap along the floor's perimeter under the skirting to allow for potential floor swelling from moisture changes. Remove all wedges used during flooring installation once the process is finished.

For the system's initial setup, adjust the mixing valve to provide a temperature ranging from 20°C to 25°C, maintaining this for at least 3 days. After this period, you can raise the flow temperature to the designed maximum, ensuring this level is maintained for an additional 4 days to finalise the installation process.

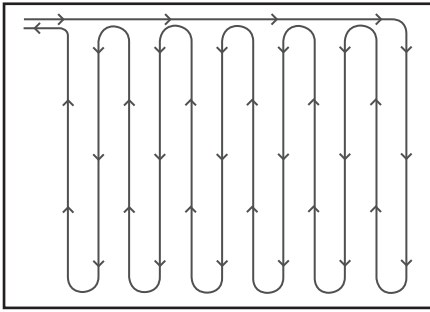
Fig. 3

ILLUSTRATION PURPOSES ONLY

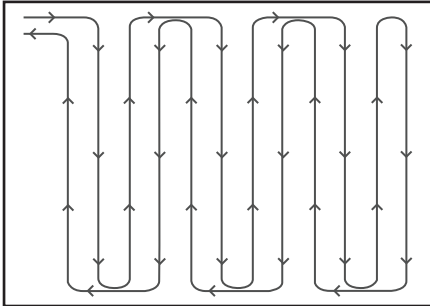


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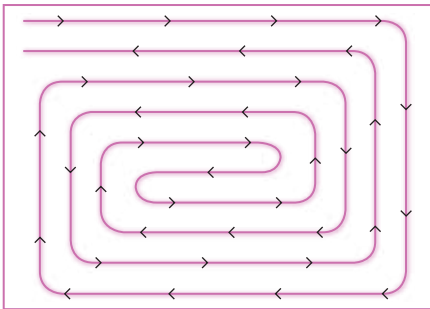
UNDERFLOOR HEATING PIPE LAYOUT OPTIONS



Serpentine - The pipe will run the length of the heated area before running back and forth through the heated area.



Double Serpentine - The pipe will run back and forth through the heated area at a 3-to-1 ratio. Once reaching the far end of the area, the pipe will run back on itself at the correct spacings filling any gaps.



Spiral - The pipe will run around the edge of the room making its way to the centre at double spacings, once at the centre, the pipe will work it's way out through the middle of the already layed pipe.

*The highlighted pattern is the best recommended pattern for this system.