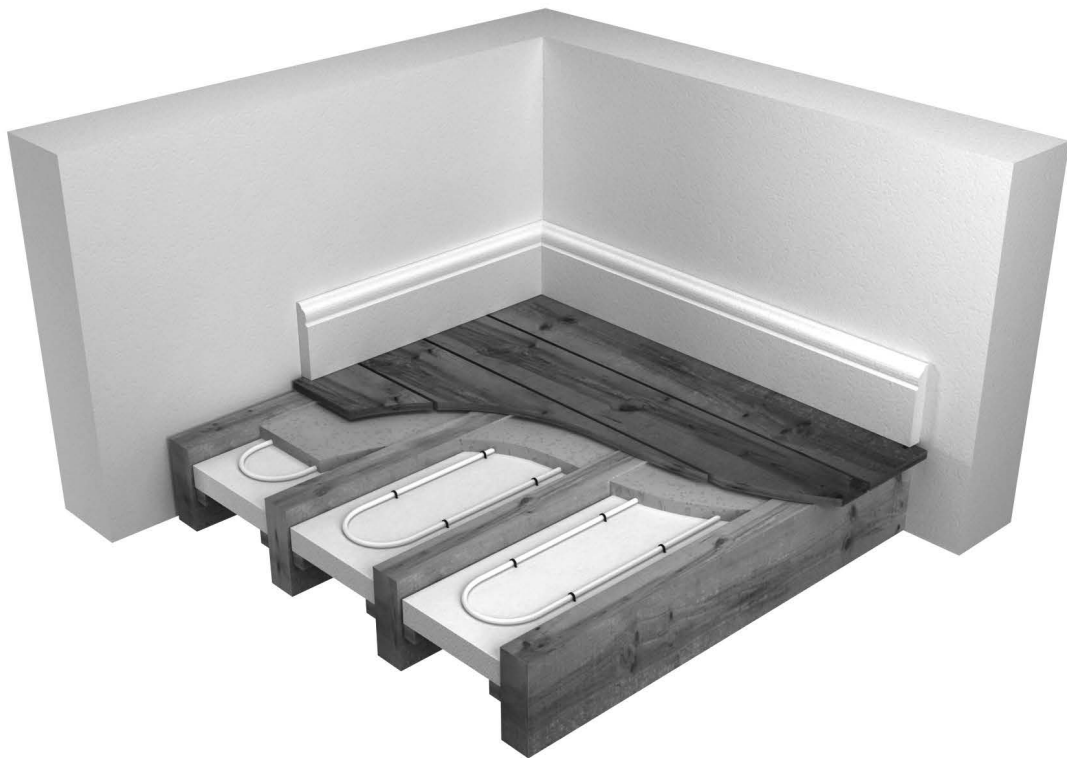


Warmup®

The best underfloor heating - **guaranteed™**

Silva Joisted Underfloor Heating Installation Manual



Technical Helpline

0845 345 2288

SAFETY Net™
Installation-Guarantee

Contents

- ③ Product Information
- ④ Important Information
- ⑥ Installation
- ⑦ Pressure Testing
Screeding & Floor Covering
Information
- ⑧ Warranty
- ⑩ Pressure Test Report

IMPORTANT

Please read this manual before attempting to install your underfloor heating.

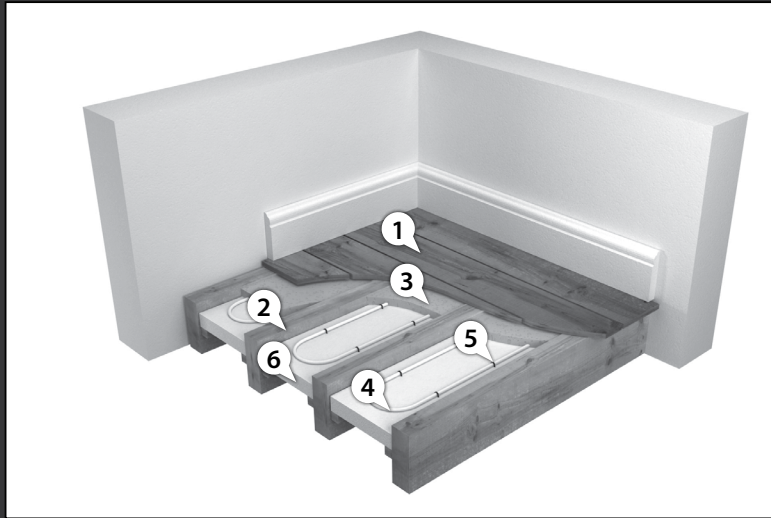
Incorrect installation will invalidate your warranty.

Warmup Plc, accepts no liability, expressed or implied, for any loss or consequential damaged suffered as a result of installations which in any way contravene the instructions that follow.

If you require any help at any stage of the installation please call our helpline :
Warmup Technical Helpline 0845 345 2288

Product Information - Warmup® Silva Joisted Floor System

- ❶ Floor Covering
- ❷ Joists
- ❸ Lightweight Screed
- ❹ Warmup Pipe
- ❺ Warmup Clip
- ❻ Insulation with membrane



System Description

The Silva Joisted Floor System is installed in many refurbishment projects.

Joists traditionally tend to be installed at 400mm centres. However, Warmup can supply a more bespoke system to suit individual properties with varying joist centers as required.

The Warmup Silva Joisted Floor System is suitable for almost any floor finish, in particular where the flooring is wood or engineered wood.

Technical Information

The insulation for the Silva Joisted Floor System installed between the joists must comply with Building Regulations in force at the time.

Battens to support the insulation will be designed and installed by the flooring contractor and co-ordinated with the installer.

This is followed by the pipework as per the approved design.

Once the system has been installed and pressure tested it should be protected by a thin screed.

Output from the system will be designed to meet your requirements taking into account such criteria as floor finishes.

Components Required

Item	Information
Warmup Pipe	PEX-a - 16mm or 20mm PE-RT/AL /PE-RT - 16mm PE-RT - 16mm
Clypso Insulation Board	PIR or EPS Gridded insulation boards available in 25mm -100mm thickness.
Warmup Pipe Conduit protection Part no. WHS-CL-CONDUIT	25mm conduit available in 50m lengths
Clypso Clips	available in 40mm,45m,60mm & 65mm.
Warmup Pipe Bend Support Part no. WHS-P-BEND	Suitable for use with all Warmup pipes

Important Information

Before commencing installation, it is important that a site inspection is performed. You will need to confirm that all measurements and other requirements on site match your building plans.

Ensure that all subfloors are the correct depth needed to incorporate the underfloor heating. Check for anything that might interfere with pipe installation such as concrete walls where they were not expected or changes to the floor layout.

Note: A redesign of the layout system may be required if any changes have been made.

Insulation

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. The insulation must be installed beneath the under floor heating system in order to ensure that any downward heat loss does not exceed 10W/m², in accordance with BS EN 1264.

Damage

Inspect the site for possible hazards that could damage the WARMUP pipe, such as nails, staples, materials or tools. Remove any items or potential hazards before installing pipe.

When handling the WARMUP PIPE it is important to protect the pipe from damage.

Uncoiling the pipe

DO NOT pull of the coil while it is sitting flat. It must be unwound from the coil, pulling from the top or the bottom of the coil. This will require one person to hold the pipe off the ground, or the use of an uncoiling device such as the WHUF-UNWINDER.

Bending Radius of the Pipe

When laying the pipe, do not force the pipe into bends. It is easier to lay the pipe with a large radius and then gently pull the pipe to the required bend.

The maximum bending radius is 5 times the diameter of the pipe.

Kinking

Pex- a pipe only

Excessive bending of the pipe can cause it to kink, where this occurs flow may be obstructed or reduced. Kinked pipe must be repaired. To repair a kink, straighten the pipe and simply heat the area with a hot air gun until the kink disappears.

NOTE: DO NOT use an open flame to heat the pipe.

Heat around the pipe to evenly heat the surface. Ensure that you do not overheat the pipe as this will result in damage. The maximum temperature that the PEX-a pipe can withstand is 95°C.

NOTE: Do not try to bend the pipe in the same spot.

Where the pipe is none Pex-a the circuit will need to be replaced with a new pipework.

Cutting the pipe

Use a pipe cutter designed for plastic pipe ensuring that there are no burrs on the pipe ends. It is important to achieve a clean cut.

NOTE: If you accidentally damage a Warmup underfloor heating pipe BEFORE covering it with screed or other coverings, under the Warmup Safetynet guarantee you may return the damaged coil of pipe to Warmup, who will replace the coil FREE OF CHARGE with pipe of the same length and type.

Important Information

Pipe Installation

Install the pipe along outside walls first so that the hottest (supply) water goes to the coldest areas. Pipe should not be installed under appliances such as freezers.

If a pipe circuit is installed under floor coverings such as carpet and tile, install pipe under the high R-value area first if possible, as this area will require a higher water temperature.

Space pipes equally between the joists to allow screed to encompass the pipework.

Plan the circuit layout ensuring that pipes can connect to manifolds without crossing each other.

Ensure that all circuits have been planned in advance to minimize areas where the pipe passes through expansion joints.

In confined areas it may not be possible to use the designed spacing. To avoid cold spots always use tighter spacing and more pipe rather than wider spacing and less pipe.

Protecting the Warmup Pipe

Pipe Bends

Protection will be required where the Warmup pipe enters the screed. The recommended method for protecting the pipe is the rigid PVC Bend Guide, which holds the pipe in a 90° bend, as well as protecting the pipe from damage.

To install PVC Bend Guides, simply insert the WARMUP pipe through the PVC Bend Guide to the appropriate length, (50-75 cm). The PVC Bend Guide should be positioned so that the pipe rises straight to the manifold with approximately half the guide within the floor.

Conduit Slewing

Using the Warmup pipe conduit protection sleeve across all construction joints in floor. Locations where pipes pass through expansion joints, door frames, walls or where the pipe could get damaged by sharp edges will require protection.

When installing the conduit cut along the length of the conduit and clip onto pipe.



Use the Warmup Pipe Bend Support where it enters the floor.

Warmup® Silva Joisted Floor System - Installation

Step 1

A plywood base will need to be inserted to allow for the insulation and screed. Ensure that the plywood base can take the subsequent weight of the insulation and screed.

Step 2

Cut the insulation to the correct size and fit between the joists. Ensure that insulation has been fitted tightly between the joists.

NOTE: Ensure that an adequate thickness of insulation has been used to meet the current building regulations.

Step 3

The floor joists then need to be notched in accordance with Building Regulations. This will allow for the entry and exit of the pipe to and from the room. Always ensure notches are deep enough.

When passing pipe through notched joists ensure that you have allowed for expansion and contraction of the pipe.

Step 4

After establishing the area to be covered by the circuit, connect to the manifold holding the pipe at a 90° bend (see page 5)

Step 5

Lay the pipe as per the design in a single meander pattern being careful to ensure the plates remain flush with the top of the joists.

Fix the pipe to the insulation using the Warmup clips at a maximum of 400mm spacing. Secure the pipes using nail clips in areas where the pipes cross over the joists.

Locations where pipes pass through expansion joints, door frames, walls or where the pipe could get damaged by sharp edges will require protection.

Step 6

Fix pipe bend to the return pipe and connect to the manifold.

Step 7

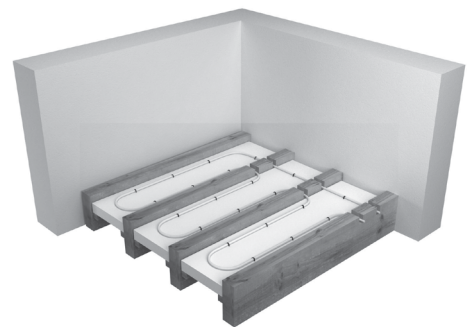
Complete Steps 4- 6 for each circuit.

FINAL FLOOR COVERING

Use 25mm to 50mm screed to cover the pipe. Lay final floor covering once screed has cured and has been commissioned as per manufacturers instructions.



Fit insulation between the joists



Run the pipework to the designed pattern



Cover the pipe with 25mm-50mm screed



Lay final floor covering once screed has cured

Pressure Testing

A system pressure test MUST be carried out before the screed has been laid. The system should be filled and each circuit purged of air.

Connect the pressure tester to the drain valve and increase the pressure test to 6 bar.

Leave at 6 bar for 1 hr. If the pressure level remains stable record the results on the pressure test certificate. If you see that the pressure has dropped you will need to inspect the pipework for damage and fittings for proper attachment.

Once the pressure test is complete reduce the system pressure down to 3 bar during screeding to protect the pipework.

Screeding & Floor Coverings

Ensure that the screed has fully cured before using the underfloor heating system as this may reduce the moisture content of the screed.

Once the screed has cured and has undergone its first heat cycle, minor micro cracking may occur within the screed. This does NOT affect the performance of the screed. However, final floor coverings must NOT be laid until the floor has cooled down completely.

When installing an underfloor heating system the thermal conductivity of the final floor covering must be considered at the design stage.

Ensure that the floor covering is suitable for use with underfloor heating. It is also important to check that any adhesives used with the floor covering are suitable and can tolerate the floor surface temperatures.

Timber floors

The important factor is the floor moisture content.

Timber floors can be laid directly over the screed if they have a moisture content of 10-11% which when heated will reduce to 8-9% and may cause a small amount shrinkage.

The floor will re-absorb some moisture when the heating is not operating and the moisture content will increase to 12-13%. The timber floor finish should not exceed 18mm in thickness. Timber flooring carries a 27°C surface temperature limit.

Carpet

The thermal resistance of carpets and underlay is fundamental in attaining good heat transfer.

The most popular underlay type is sponge with a waffle pattern molded into the underside.

These allow good heat transfer. Felt and rubber crumb underlay should be avoided. These products can seriously reduce the effectiveness of an under floor heating system, as they insulate the floor surface and prevent heat transfer. For optimal system performance choose an underlay with a maximum TOG value of approximately 0.5. The maximum combined TOG value of carpet should not exceed 2.5 TOG.

Tiles

These floor coverings work well with under floor heating. The Tiles should be laid on a full bed with no air gaps. It is important that the design of the supporting floor structure is stable and rigid to prevent cracking. It is recommended that flexible adhesives and grout be used.

Vinyl

Check the floor surface temperature indicated by your vinyl supplier for compatibility with under floor heating. Vinyl flooring carries a 27°C surface temperature limit.

Warranty

Warmup Plc Limited Warranty – Hydronic Floor Heating Pipe

PLEASE REGISTER YOUR UNDERFLOOR HEATING SYSTEM ONLINE AT: www.warmup.co.uk

Registration can be completed online at www.warmup.co.uk. In the event of a claim, proof of purchase is required, so keep your invoice and receipt - such invoice and receipt should state the type of pipe that has been purchased.

THIS WARRANTY DOES NOT EXTEND TO OTHER COMPONENTS WHICH ARE COVERED BY SEPARATE WARRANTIES. THIS WARRANTY DOES NOT AFFECT YOUR STATUTORY RIGHTS.

Limited Warranty:

Warmup® underfloor heating pipe is warranted by WARMUP PLC (“Warmup”) to be free from defects in manufacturing under normal use and maintenance, and is warranted to remain so subject to the limitations and conditions described below.

This warranty period begins on the date of purchase. Registration is confirmed only when confirmation of receipt is forwarded by Warmup PLC.

Warranty Duration



•The Pex-a Underfloor heating pipe is warranted for the LIFETIME of the floor under which it is fitted, except as provided below; your attention is drawn to the exclusions listed and the end of this warranty.



•The Pe-rt Underfloor heating pipe is warranted for a period of 50 years from date of purchase, except as provided below; your attention is drawn to the exclusions listed and the end of this warranty.

•The Pe-rt-Al-Pe-rt Underfloor heating pipe is warranted for a period of 50 years from date of purchase, except as provided below; your attention is drawn to the exclusions listed and the end of this warranty.

Notification of a suspected failure must be received in writing by Warmup within thirty (30) days of the suspected breach. Products believed to be defective must be made available to Warmup for testing and determination of cause.

Upon acceptance of any warranty claim, Warmup shall have ninety (90) business days in which to investigate and determine whether it recognises responsibility for any believed defects in material or workmanship and determines the appropriate course of action to be taken.

It is expressly agreed that the sole remedies under this limited warranty shall be at the discretion of Warmup, Plc. to either: issue a refund, repair or replace any article which is proven to be defective. Any and all allowances made to customers for transportation, labour, repairs or all other work, are at the exclusive discretion of Warmup and shall be authorised in writing, in advance, by Warmup. Such cost does not extend to any cost other than direct costs of repair or replacement by Warmup and does not extend to costs of relaying or repairing any floor covering or floor.

The warranty applies to the products identified above only if they:

1. are registered with Warmup within 30 days after purchase;
2. are selected, designed and installed by a qualified contractor according to installation instructions provided by Warmup which are current as of the applicable Installation Date;
3. are connected to appropriate power and water supplies;
4. are installed according to all applicable building code requirements;
5. are not exposed to pressures and/or temperatures that exceed any limitations printed on the warranted product or in the applicable Warmup product installation manual;
6. remain in their original installed location, such that the floor covering or screed over the product is not damaged, lifted, replaced, repaired or covered with subsequent layers of flooring;
7. do not show evidence of accidental damage, misuse, lack of care, tampering, or repair or modification without the prior written approval of Warmup Plc.

Without limiting the foregoing, this Warmup Warranty does not apply to:

- 1.damage or repairs required as a consequence of faulty installation, application or abnormal operating conditions;
- 2.damage caused during installation, screeding, laying of the flooring or floor finish, or any other remedial works to the floor that are done post installation;
- 3.damage as a result of floods, fires, winds, lighting, accident, corrosive atmosphere, ultraviolet light or other conditions beyond the control of Warmup Plc;
- 4.use of components or accessories not compatible with this product;
- 5.products installed outside the country of original intended destination when specified by Warmup.
- 6.Normal maintenance as described in the installation and operating manual.
- 7.Parts not supplied or designed by Warmup.
- 8.Any damage caused by frozen or broken heat transfer fluid pipes in the event of equipment failure.
- 9.Changes in the appearance of a product that does not affect its performance.

NOTE: It is important to check that the pipe is pressure tested as specified in the installation manual, prior to screeding or final flooring/finishes being laid.

The above Limited Warranty is the full extent of explicit warranties provided by Warmup Plc.

By mutual agreement of all parties, it is agreed that this limited warranty, any claims arising from breach of contract, any breach of warranty, or any other claim arising, shall be governed under the laws of England and Wales. It is expressly understood that Warmup Sales Representatives, Engineers, Distributors, Sub-contractors and Sales and Technical Support Team Members have no authority whatsoever to bind Warmup to any agreement, warranty or remedy of any kind without the express written consent of Warmup Plc.

WARMUP PLC. DISCLAIMS:

- ANY WARRANTY NOT PROVIDED HEREIN INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE.
- ANY STATUTORY OR IMPLIED WARRANTY OF HABITABILITY AS WELL AS ANY RESPONSIBILITY FOR LOSSES, EXPENSES, AND INCONVENIENCES, SPECIAL, INDIRECT, SECONDARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM POSSESSION OR USE OF THE PRODUCTS AND ITEMS SOLD HEREUNDER.

THIS WARRANTY DOES NOT AFFECT YOUR STATUTORY RIGHTS.



The Warmup Safety Net Installation Guarantee for Underfloor Heating Pipe

The Guarantee:

If you accidentally damage a Warmup underfloor heating pipe BEFORE covering it with screed or other coverings, you may return the damaged coil of pipe to Warmup, who will replace the coil FREE OF CHARGE with pipe of the same length and type.

Exceptions:

- 1.The Safety Net Guarantee does not cover any other type of damage, misuse, or improper installation due to improper adhesive or subfloor conditions. Limit of one free replacement coil of pipe of a maximum of 125m in length per customer, installer and/or property.
- 2.If at any point Warmup believes the damage to be malicious or intentional, they shall reserve the right to withdraw this guarantee.
- 3.Damage to the pipe that occurs after installing your system is not covered by the Safety Net installation guarantee.
- 4.You must purchase the Warmup Underfloor Heating system from a recognised reseller, and follow all recommended installation procedures written in the, at time of purchase, current Installation Manual. Failure to follow the instructions will result in the revocation of the guarantee.



Underfloor Heating Pressure Test Report

Client :
Installation Address :

Installer Name :
Address :

Completion Date :

Room / Area	Circuit no.	Pass	Notes

Signed by Tester :	Print Name :	Date:
Witnessed by:	Print Name :	Date:

This form must be completed and a copy sent to Warmup to validate the system warranty.

Warmup PLC
702 & 704 Tudor Estate
Abbey Road
London
NW10 7UW

Web: www.warmup.co.uk

Email: uk@warmup.com

Tel: 0845 345 2288

Fax: 0845 345 2299