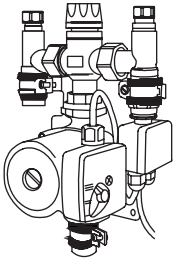
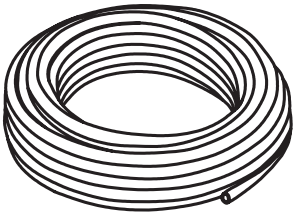
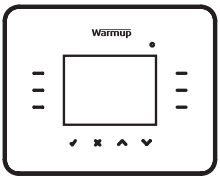
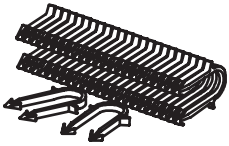
Warmup®

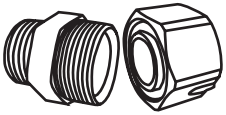
The best underfloor heating - **guaranteed**™











Installation Manual

HydroPack™

All in one underfloor heating kit for up to 22m²

Maximum heating output: 3 KW

bsi. ISO 9001 Quality Management FS 586320

beama

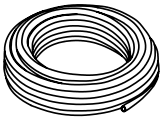
UHMA THE TRADE ASSOCIATION FOR SURFACE HEATING & COOLING

Contents

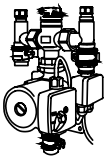
WARNING

If at any stage during the installation process you are in any doubt please call the Warmup® Technical Helpline on 0845 345 2288 for assistance.

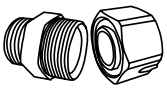
Pack Components



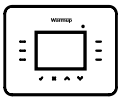
1 x 120m Coil of PE-RT Pipe



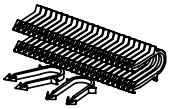
1 x Single Room Pump/Mixing Control Unit



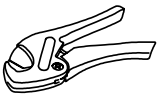
2 x Compression Fittings



1 x Warmup 3iE™ Room Thermostat



600 x Pipe Clips



1 x Pair of Pipe Cutters

1 x PTFE Thread Seal Tape

1 x Installation Instructions

Please check that your Hydropack™ contains all these items before you begin installation.
If you are missing any component, please call Warmup on 0845 345 2288

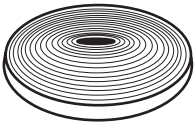
Additional Components

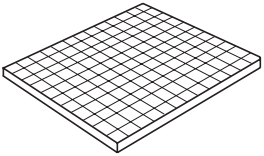
Insulation boards and perimeter edging strips are recommended for the installation of Hydropack™ for most projects, and should be bought separately based on the specific requirements of the project. Advice should be sought from an expert to ensure the conformity to the correct Building Regulations and Practices. The correct insulation and perimeter edging strip can be provided by Warmup.

Additional components for areas larger than 22m² are also available from Warmup.

Insulation WHS-CL

WHS-X-EDGE50 Perimeter edging strip





Single Room Pump & Mixing Control Unit

Description

A UFH control unit for providing temperature controlled mixed water in single room applications for a system with a maximum heat output up to 3kW.

Note: Please ensure your heat source (e.g. boiler) has adequate capacity to provide the necessary heat output.

This is a compact and lightweight modular control pack, designed to be connected onto existing pipework. The control pack consists of a mixing valve, circulating pump, isolating valves, flow and return connections and a fixing kit.

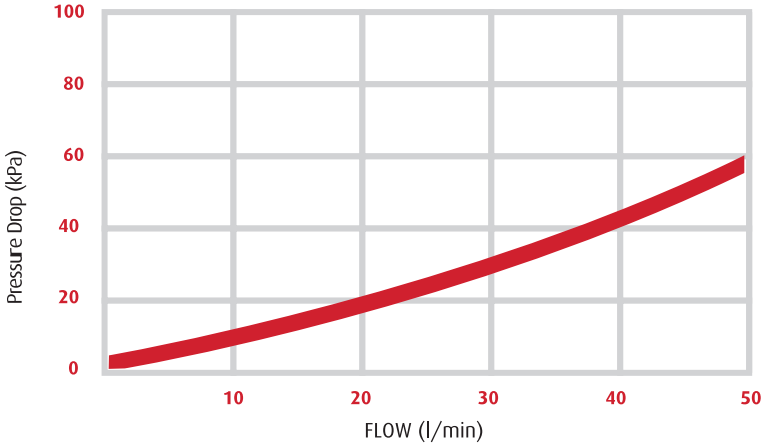
Specification

Maximum temperature	90°C
Adjustable water temperature control range	35-65°C
Factory preset	35°C (minimum setting)
Maximum static pressure	10 bar*

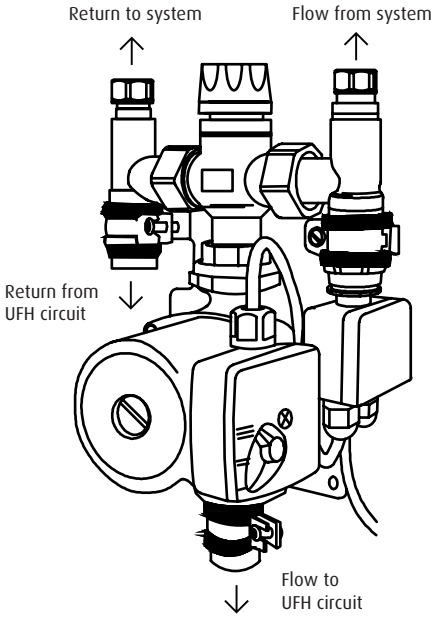
***NOTE:** *Pipe withstands a maximum pressure of 6 bar*

Single Room Pump & Mixing Control Unit

Flow Performance



Control & Pump Unit



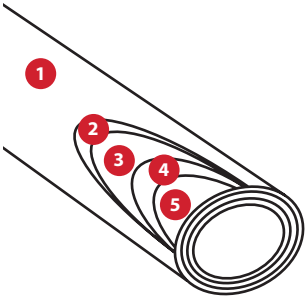
Pipe Specification

Warmup PE-RT Pipe

The Warmup PE-RT pipe is a 5 layer extrusion of polyethylene of raised temperature resistance. It is manufactured as follows 1 PE-RT 2 Adhesive 3 Oxygen barrier (EVOH) 4 Adhesive 5 PE-RT.

The oxygen diffusion barrier encases the inner layer of the PE-RT pipe completely, preventing the entry of oxygen into the heating system via the pipework. The tough outer layer is designed to withstand the rigours of surrounding workloads, ensuring that the oxygen barrier remains intact. This significantly reduces the risk of corrosion within the entire system.

General	
Pipe range nominal dimensions	16mm OD 2mm wall thickness
Colour	Natural
Coil sizes	16 x 2mm – 120m
Maximum temporary peak temperature	70 °C
Maximum operating pressure	6.0 bar
Construction 5 layer:	PE-RT – Adhesive - Oxygen Barrier (EVOH) – Adhesive – PE-RT
Mechanical properties	
Composition	Medium density polyethylene
Pipe roughness	0.007 mm/m
Bending radius	5 x outside diameter minimum
Water capacity	16mm – 0.113 l/m
Oxygen permeability	<0.32 mg O2/(M2 . d)
Thermal properties	
Thermal conductivity	0.40 W/m K
Oxygen permeability	<0.32 mg O2/(M2 . d)
Standards	
Manufacturing	EN ISO 22391



Warmup 50 YEAR LIMITED WARRANTY

SAFETY Net™ Installation-Guarantee

Heat Outputs & Area Design

The Warmup® Hydropack™ is suitable for use in various areas, depending on the heat output required. Pipes set at a wider spacing will have a lower maximum output than those at a narrow spacing.

It is worth noting that floor finishes will have an effect on the heat output. Any flooring and underlay combinations placed above the heating system should have a TOG of no greater than 2.0.

Please see the table below for the recommended spacing you will require and the approximate heat output you will obtain based on your floor finish.

Pipe spacing at 150mm:

Heating output per floor type (W/m²)						
None	Tile	Stone	Vinyl	Laminate	Timber	Carpet & Underlay
150	144	137	136	118	89	69

Heating output per floor type (Total Watts per heated area)							
Area (m²)	None	Tile	Stone	Vinyl	Laminate	Timber	Carpet & Underlay
1	150	144	137	136	118	89	69
2	300	287	274	273	236	179	138
4	600	574	549	545	472	357	276
6	900	861	823	818	708	536	414
8	1200	1149	1098	1091	944	715	552
10	1499	1436	1372	1363	1180	893	690
12	1799	1723	1646	1636	1416	1072	828
14	2099	2010	1921	1908	1652	1250	966
16	2399	2297	2195	2181	1888	1429	1104
18	2699	2584	2469	2454	2124	1608	1242
20	2999	2871	2744	2726	2360	1786	1380
22	3299	3158	3018	2999	2596	1965	1518

Pipe spacing at 200mm:

The Warmup® Hydropack™ is suitable for use in various areas, depending on the heat output required. Pipes set at a wider spacing will have a lower maximum output than those at a narrow spacing.

Heating output per floor type (W/m²)						
None	Tile	Stone	Vinyl	Laminate	Timber	Carpet & Underlay
129	124	119	118	104	81	64

Heating output per floor type (Total Watts per heated area)							
Area (m²)	None	Tile	Stone	Vinyl	Laminate	Timber	Carpet & Underlay
1	129	124	119	118	104	81	64
2	259	248	238	237	208	161	127
4	517	497	476	473	415	323	254
6	776	745	713	710	623	484	381
8	1035	993	951	947	831	645	508
10	1293	1241	1189	1183	1038	806	635
12	1552	1490	1427	1420	1246	968	762
14	1810	1738	1665	1656	1453	1129	889
16	2069	1986	1903	1893	1661	1290	1016
18	2328	2234	2140	2130	1869	1451	1143
20	2586	2483	2378	2366	2076	1613	1270
22	2845	2731	2616	2603	2284	1774	1397

Installation

Preparation

Ensure the sub floor has a clean, dust free and dry surface for laying the heating system. The area is best cordoned off to prevent entrance to the area during installation, minimising damage. It is desirable to keep pipework warm if possible so it is easier to handle, but this is not critical.

A Damp Proof Membrane (DPM) may be required, which should lap up the walls as per manufacturer's instructions.

Insulation

Before commencing installation, ensure the insulation is laid on a clean, dry and level subfloor, above the DPM, if required. Any insulation used must conform to the current Building Regulations and Practices. The correct insulation can be provided separately by Warmup. Installation of the insulation should be as per the manufacturer's instructions and care should be taken not to pierce the DPM.

Warmup can supply insulation for all project requirements. The Clypso board is recommended for use with the tacker clips. If plain Polystyrene or PIR insulation is used, a polyethylene sheet should be placed over the top to act as a slip membrane.

A perimeter strip or edge insulation should be laid around the perimeter of the room and fixed to the wall, once screed has been laid and allowed to cure, it can be trimmed to the actual screed level.

Connecting to the Control and Pump Unit

It is best practice to have the control unit plumbed in from the main primary and not in between radiators or other heating circuits. Please consult a plumbing and heating engineer if unsure.

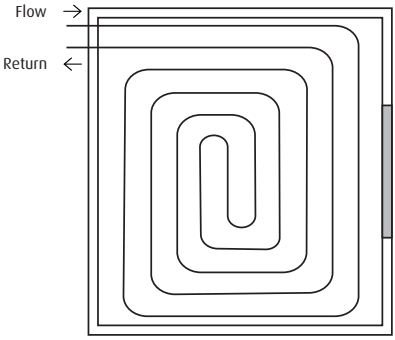
The compact control and pump unit should be wall mounted in a vertical position on a suitable wall either in the project room or the adjacent space to the project area. The unit is typically installed 600 mm above the finished floor level, and the flow and return valves to the UFH circuit should be facing downwards. Choose a suitable & solid mounting location, ensuring adequate clearance for primary and underfloor heating pipework and accessibility of the control unit. Locate the unit on the wall and mark the hole fixing positions with a pencil. Drill out the holes, taking care and attention of hidden or surrounding services and mount the unit using the fixings provided. The PTFE tape provided should be used to make all threaded connections.

NOTE: do not connect primary heating flow and return pipework until after the pressure testing has been performed.

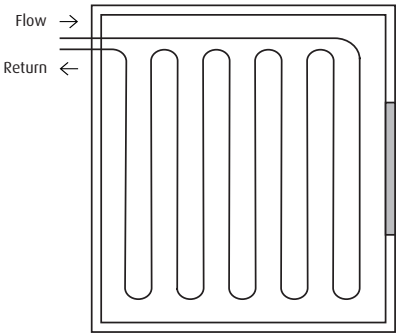
Step 1 - Laying the pipework

Before laying the pipe, the area should be thoroughly surveyed and the configuration for laying the pipe planned; see layout diagrams below. Begin to unwrap and uncoil the pipe

Spiral pipe layout for rectangular shaped rooms where even spread of heat is required



Serpentine pipe layout for odd shaped or specific heat areas (i.e. to concentrate flow near windows or doors)



Once the pipework has been laid, work out where to cut the pipe for the final connection into the manifold (ensure this will not be too short for the manifold connection). Insert into the final compression fitting and connection on to the manifold. Tighten the compression fittings after this.

Step 2 - Pressure testing

Before connecting the primary heating pipework to the control unit, a pressure test is required. Connect a temporary mains pressure hose to the red ball valve and an outlet hose or bucket to the blue ball valve. Open both valves fully and allow the system to fill with water and purge all traces of air from the system. Once the system has stopped gurgling and a constant flow of water is being circulated, the air has been removed and you can close the both valves and disconnect the hose.

Using a pressure testing kit (available for hire from your local plant/test hire or purchase from your local plumbers merchant), connect to the red valve and open. Build the pressure up to 6 Bar and allow stabilising and holding for an hour, checking the connections and pipe for damage and leaks during this time. At this point, it is recommended that pictures are taken of the installation, as a reference should there be issues later on. Note that the system should also be under pressure when screeding of the floor commences.

Step 3 - Screeding

If using a standard sand/cement screed, we recommend a thickness of between 65mm & 75mm on top of the insulation. The screed & screeding works must comply with current building regulations and attention must be paid to the curing times. Under no circumstances should the UFH be used to force curing of the screed. The UFH should not be commissioned until the manufacturer's curing time has passed, or as per Building Regs allow 28 days for sand//cement screed.

Thermostat Wiring Information

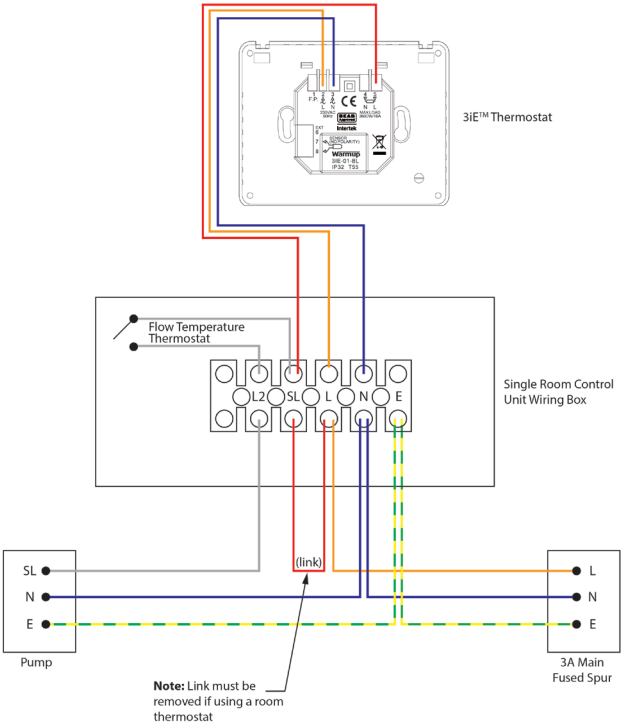
All wiring will need to be undertaken by a qualified electrician and conform to the IEE regulations. To comply with these regulations the connection on the control unit is supplied with a Earth connection. Connect the control unit to a 3amp mains fed fused spur. Improper installation may result in injury, death or damage.

The thermostat should be installed in a standard 35mm patress box. A qualified electrician should install the thermostat. Pick a suitable location away from direct sunlight and heat sources so that the thermostat can monitor an appropriate air flow of the room. Do not to push on the LCD display to avoid damaging it. It is good practice to install the floor probe in conduit for easy replacement.

This control unit can be run without a room thermostat, and will operate when the temperature of the primary flow reaches over 31°C and will shut off when it achieves a flow of 42°C. However it is more efficient and functional to control the heating system with the room thermostat provided.

When installing a room thermostat, the link from SL to L will need to be removed in the wiring box of the control unit. (See diagram overleaf)

Thermostat Wiring Diagram



When setting up Energy Monitoring on your 3iE Energy Monitoring Thermostat you will need to enter your system power. To calculate this use the table below to find the output for your floor finish and pipe spacing. Multiply this output by your square meterage to find your approximate total power output in Watts.

Area	Pipe	Heat Output	None	Tile	Stone	Vinyl	Laminate	Timber	Carpet & Underlay
16m^2	150mm	W/m^2	150	144	137	136	118	89	69
22m^2	200mm	W/m^2	129	124	119	118	104	81	64

Commissioning

After pipe installation, pressure test, and the electrical work is carried out, the connection to your primary heating circuit can be made. Do not switch on the underfloor heating until the screed has cured as per manufacturers instructions or the building regulations guidance. The Mixing valve on the control pack should be set to the minimum temperature (approx. 35°C) and run ideally for a continuous period of 3 days.

After this period, the temperature can be increased by increments of 5°C per day up to what will be the desired operating temperature. Once this has been obtained run the system for 3 further days at this operating temperature. The relative humidity of the screed should be checked prior to any floor finishes being laid, as to comply with the flooring manufacturer's installation procedures.

Operation

When the primary heating circuit has reached a flow temperature of around 43 degrees and the thermostat is calling for heating, the control unit will begin to run. The mixing valve will maintain the set mixed temperature by continually blending down the flow from the heat source with the cooler return water from the underfloor heating loop. When the air temperature in the room reaches the required set point, the thermostat will shut off the underfloor heating. If the primary heating temperature drops below 30°C, than the control unit will automatically shut itself down to avoid circulating cool water around the underfloor heating system and wasting energy, this is regardless of the set point on the thermostat.

Control Settings

The thermostatic blending valve has a temperature setting range of 35-60°C.

Blending valve settings – Min = 35°C, 1 = 40°C, 2 = 45°C, 3 = 50°C, 4 = 55°C, Max = 60°C

The floor probe is installed to lead the flow temperature based on the demand and flooring type.

Take care not to provide too high a flow temperature setting for temperature sensitive floor finishes such as timber. As a guideline, these should be set between Min and 2. The maximum floor surface temperature should not exceed 29°C, and most timber finishes should not exceed 27°C. Always consult your floor finish manufacturer to their installation and operation guidelines when using with underfloor heating.

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 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 STATUATORY RIGHTS.

The Warmup SafetyNet Installation Guarantee for Underfloor Heating Pipe

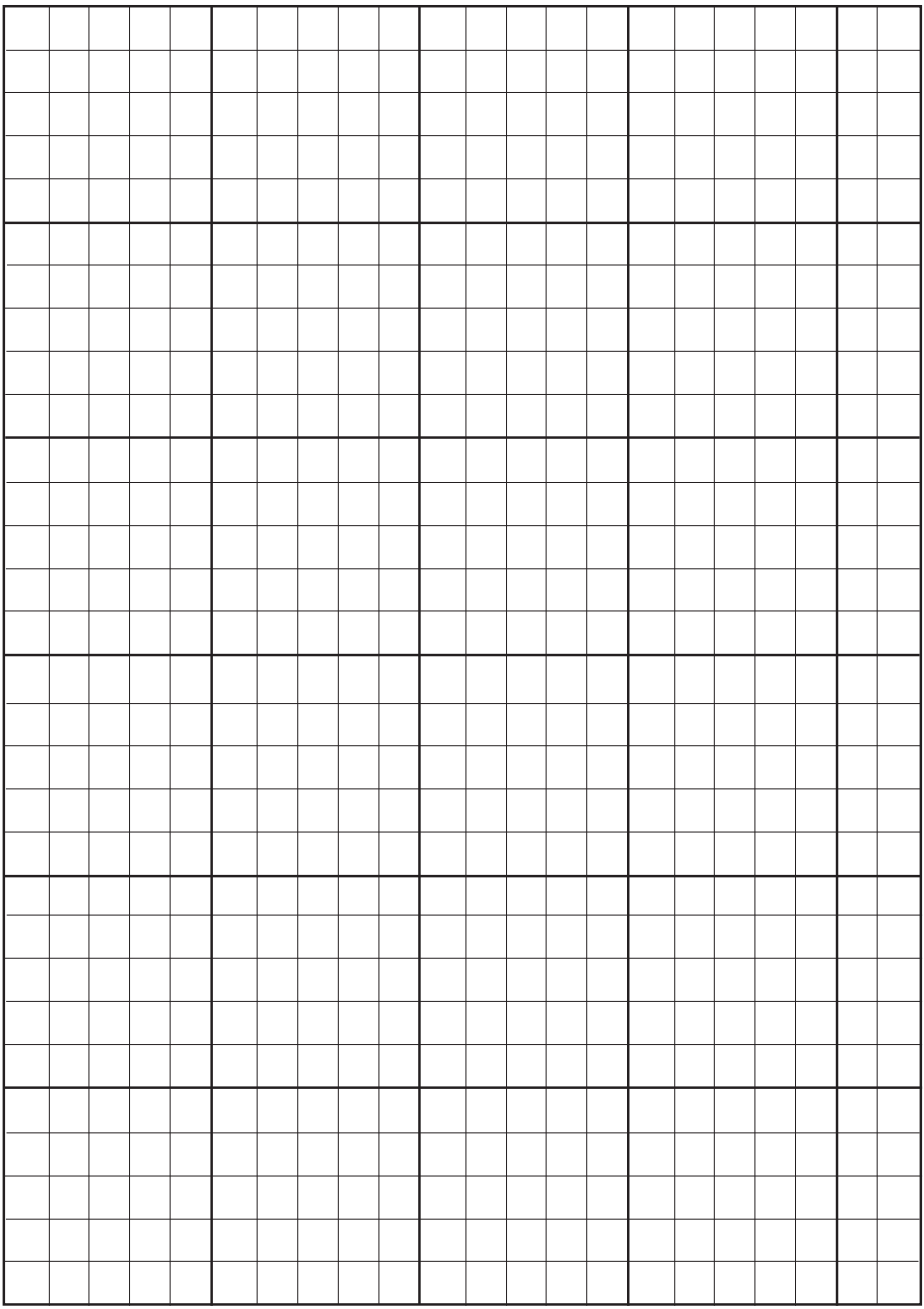
The Guarantee:

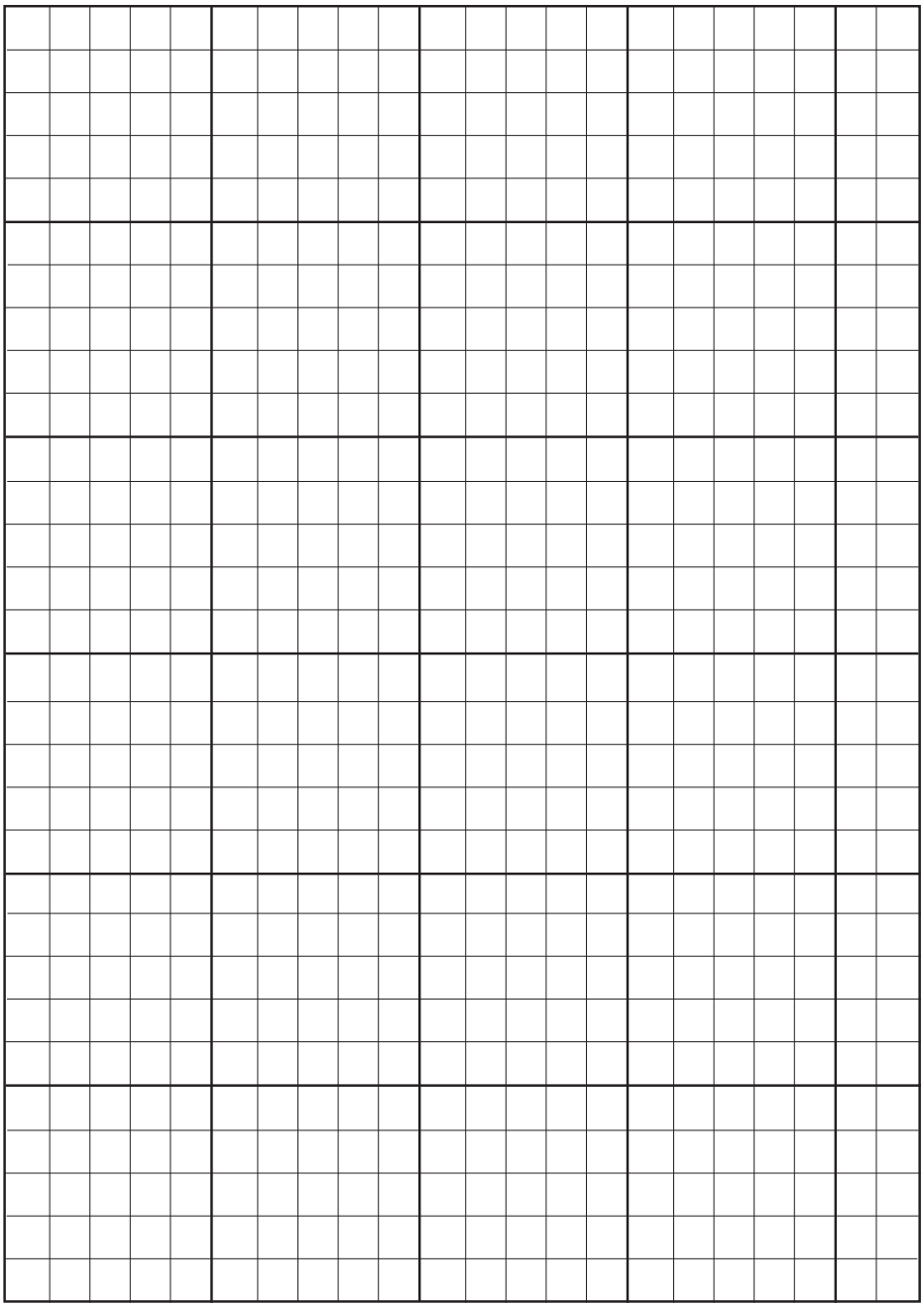
If you accidentally damage a Warmup underfloor heating pipe BEFORE covering it with screed or other coverings, you may return the damaged coil of pipe to Warmup, who will replace the coil FREE OF CHARGE with pipe of the same length and type.

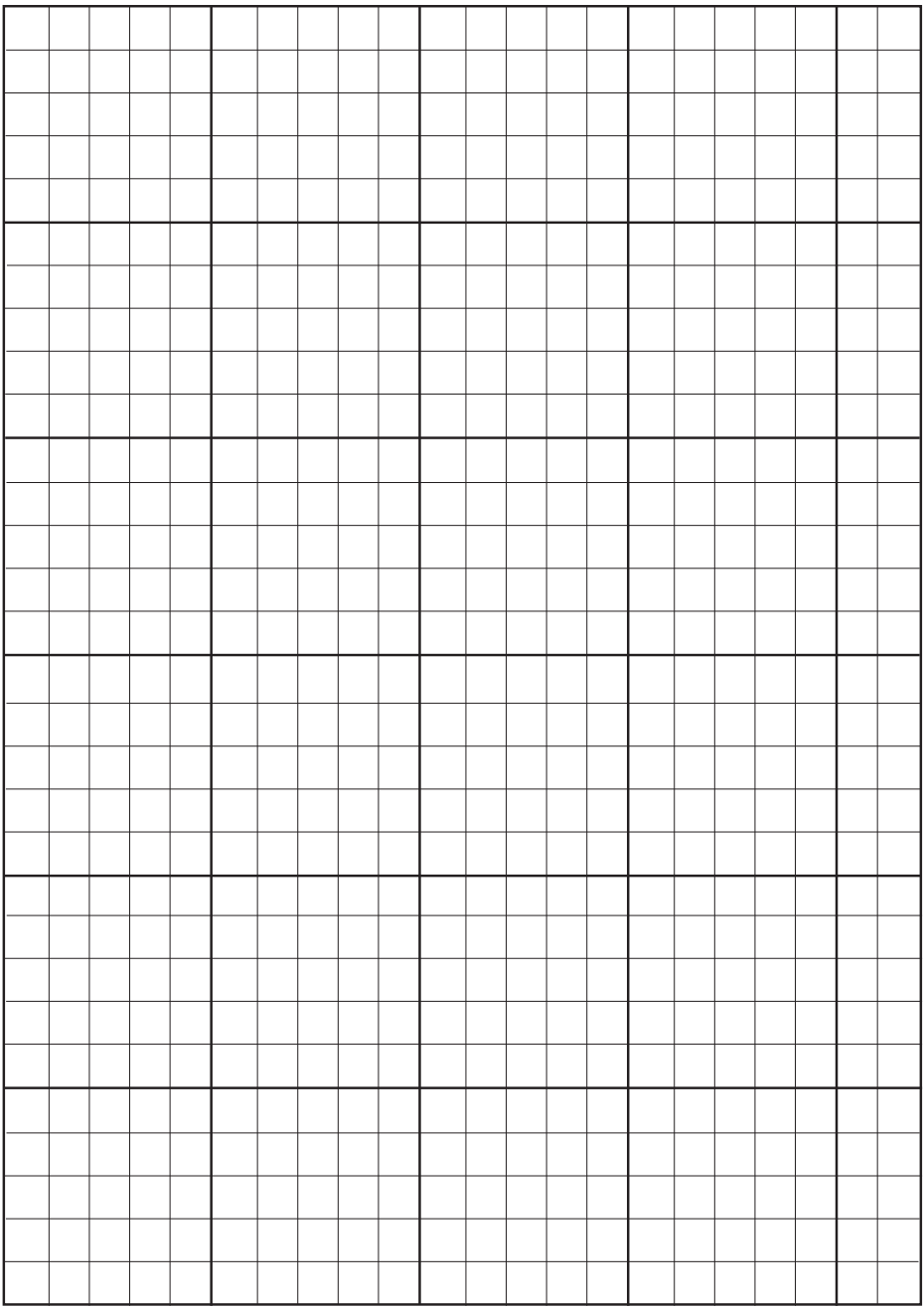
Exceptions:

1. The SafetyNet 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 SafetyNet 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

Floor Plan







The best underfloor heating - **guaranteed**™

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