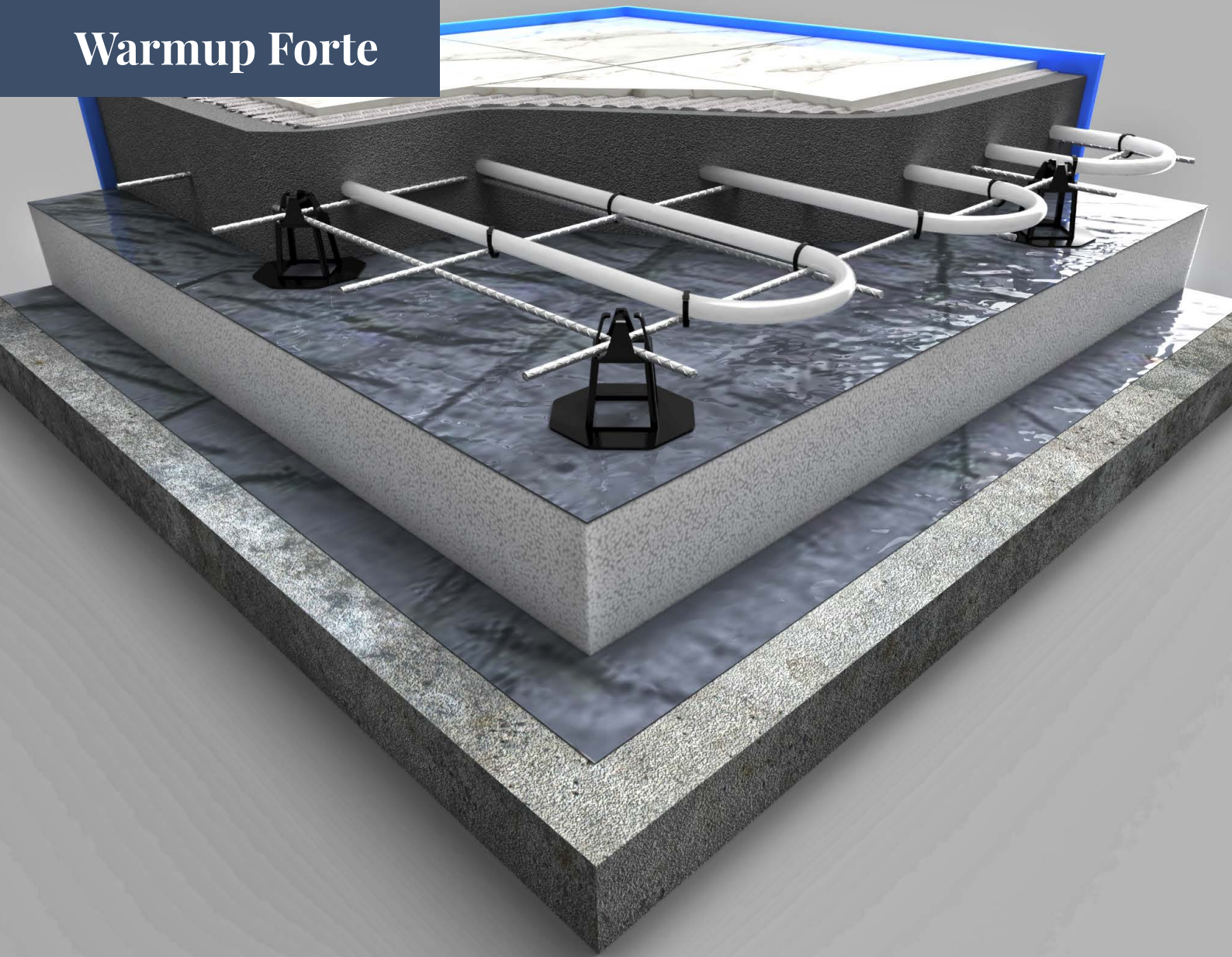


Warmup Forte



For a Variety of Floor Finishes

The system is suitable for almost any floor finish, in particular where the flooring is for a commercial application, such as epoxy paint or resin.

For New-Build Projects

Designed for a secure installation in large-scale new-build construction projects with screed and concrete subfloors.

Fastened to Reinforced Bars

The heat diffusion of the steel reinforcement means the Forte System typically emits 5-10% more heat than a system without reinforcement.

Pipe Can be Installed in the Centre

To ensure the most heat-responsive floor, the pipe can be installed in the centre of the concrete zone.



Overview

The Warmup Forte system is a heavy-duty hydronic underfloor heating solution for load-bearing structural floors and can be installed using Warmup's 16 mm PE-RT heating pipe.

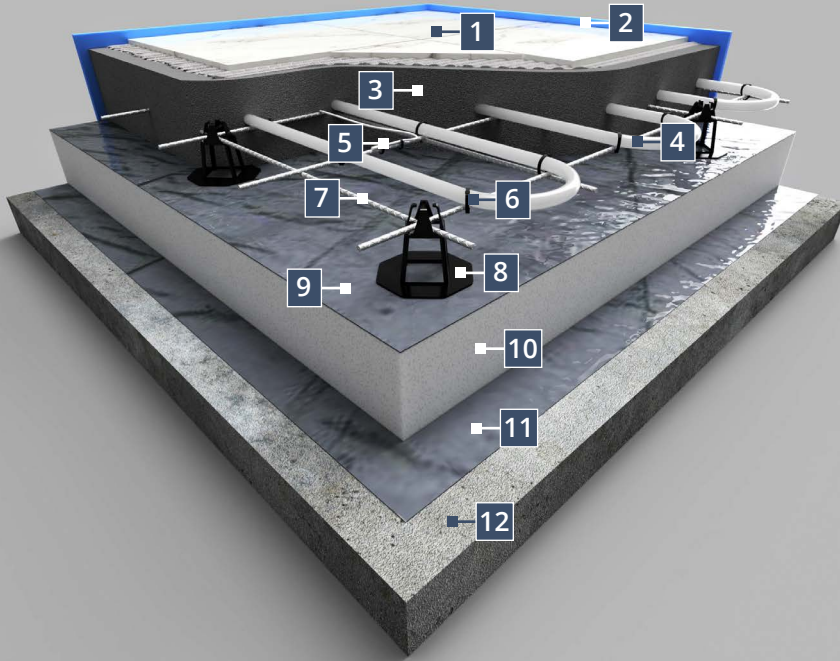
The Forte System is quick and simple to install with the pipe simply zip tied to the reinforcement being used. Once in place the pipe is resilient to disruption on site and suitable to receive a power floated concrete floor.

The steel grid enhances the system performance by conducting the heat away from the pipe to create a warmer and more even surface temperature.

As the reinforced concrete floor typically has a higher thermal mass, this will extend the time the system takes to warm up and cool down, generally making the system better suited to continuous operation.

Typical Floor Build-Up

Recommended Subfloor - All Floor Finishes



1 Floor Finish
2 Perimeter Strip <i>To allow for differential movement between finished floor level and walls</i>
3 Concrete Layer
4 Warmup PE-RT Pipe
5 Floor Sensor <i>Tab tape the sensor to the subfloor. Do not tape over the sensor tip!</i>
6 Zip Ties
7 Reinforcement Mesh
8 Reinforcement Mesh Supports
9 Vapour Control Layer (VCL) <i>To prevent water ingress</i>
10 Insulation Layer
11 Damp Proof Membrane (DPM) <i>To prevent water ingress</i>
12 Concrete subfloor

System Performance

k _H Value - W/m ² K													
Resistance of Floor Covering, tog	0.00	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00

Pipe Centres	Warmup Forte - 100mm Concrete with A142 Steel Reinforcement Mesh Mid Depth, Thermal Conductivity λ = 1.80 W/m.K												
100mm	7.83	6.43	5.46	4.74	4.19	3.76	3.41	3.12	2.87	2.66	2.48	2.32	2.19
150mm	6.70	5.59	4.80	4.21	3.76	3.40	3.10	2.85	2.64	2.46	2.30	2.16	2.04
200mm	5.76	4.87	4.24	3.76	3.38	3.08	2.82	2.61	2.43	2.27	2.14	2.02	1.91
250mm	4.96	4.26	3.75	3.35	3.04	2.79	2.58	2.40	2.24	2.11	1.99	1.88	1.79
300mm	4.28	3.72	3.32	3.00	2.74	2.53	2.35	2.20	2.07	1.95	1.85	1.76	1.67

q = Specific Heat Output, W/m ²	k _H = System Performance Factor, W/m ² K
T _{water} = Mean water Temperature	T _{air} = Room Air Temperature

Using the system k_H value to calculate the system heat output:

$$q = k_H \times (T_{\text{water}} - T_{\text{air}})$$

Example:

The heat output through an 18 mm thick, ≈ 1.25 tog timber floor, over Warmup Forte, fitted with pipe at 200 mm centres, in a 21 °C room heated with 40 °C water is;

$$q = 3.08 \times (40 - 21) = 3.08 \times 19 = 58.52 \text{ W/m}^2$$

Alternatively, using the system k_H value to calculate the required water temperature, knowing the required heat output:

$$T_{\text{water}} = (q / k_H) + T_{\text{air}}$$

Example:

The water temperature required to produce a heat output of 55 W/m², through a 3 mm thick ≈ 0.25 tog LVT floor finish, over Warmup Forte, fitted with pipe at 200 mm centres, in a 22 °C room is;

$$T_{\text{water}} = (55 / 4.09) + 22 = 13 + 22 = 33 \text{ °C}$$

Components



PE-RT Pipe - WHS-P-PERT-xx

Warmup PE-RT (Polyethylene of Raised Temperature Resistance) pipe. The pipe guarantees leak free performance with a smooth internal structure for improved flow, reduced pressure loss and deposit formation.



Warmup 6iE - 6iE-01-OB-DC / 6iE-01-BP-LC

The world's first UFH thermostat with a smartphone touchscreen providing effortless control at your fingertips. Connected to the internet by WiFi, it can be controlled from a smart phone, tablet or computer as well as its own touchscreen interface. Working automatically; it learns your routines and location through background communication with your smartphone. Using this knowledge it suggests ways to save energy.



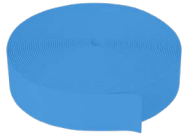
Warmup Element - RSW-01-WH-RG (ELM-01-WH-RG) / RSW-01-OB-DC (ELM-01-OB-DC)

Warmup's Element WiFi Thermostat has been designed with simplicity and stylish functionality in mind. It brings energy-efficient heating control to all Warmup floor heaters. Combining smart technology with simple, contemporary design, the Element WiFi Thermostat is the perfect all-rounder to control Warmup heating systems.



Pipe bend supports - WHS-P-BEND

The bend support is used for supporting pipes to make a smooth 90-degree turn where needed & provides a rigid bend which changes the pipes direction without causing excessive bending



Warmup perimeter strip - WHS-X-EDGE50

High quality foam perimeter strip, to allow for differential movement between finished floor level and walls when layer the screed over the Forte system.



Pipe Conduit - WHS-CL_CONDUIT

A standard flexible conduit used to cross expansion joints and insulate flow and return pipework, reducing its heat output as it passes through other rooms.

Contact

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