

PRODUCT OVERVIEW - VIEGA FONTERRA HYDRONIC HEATING



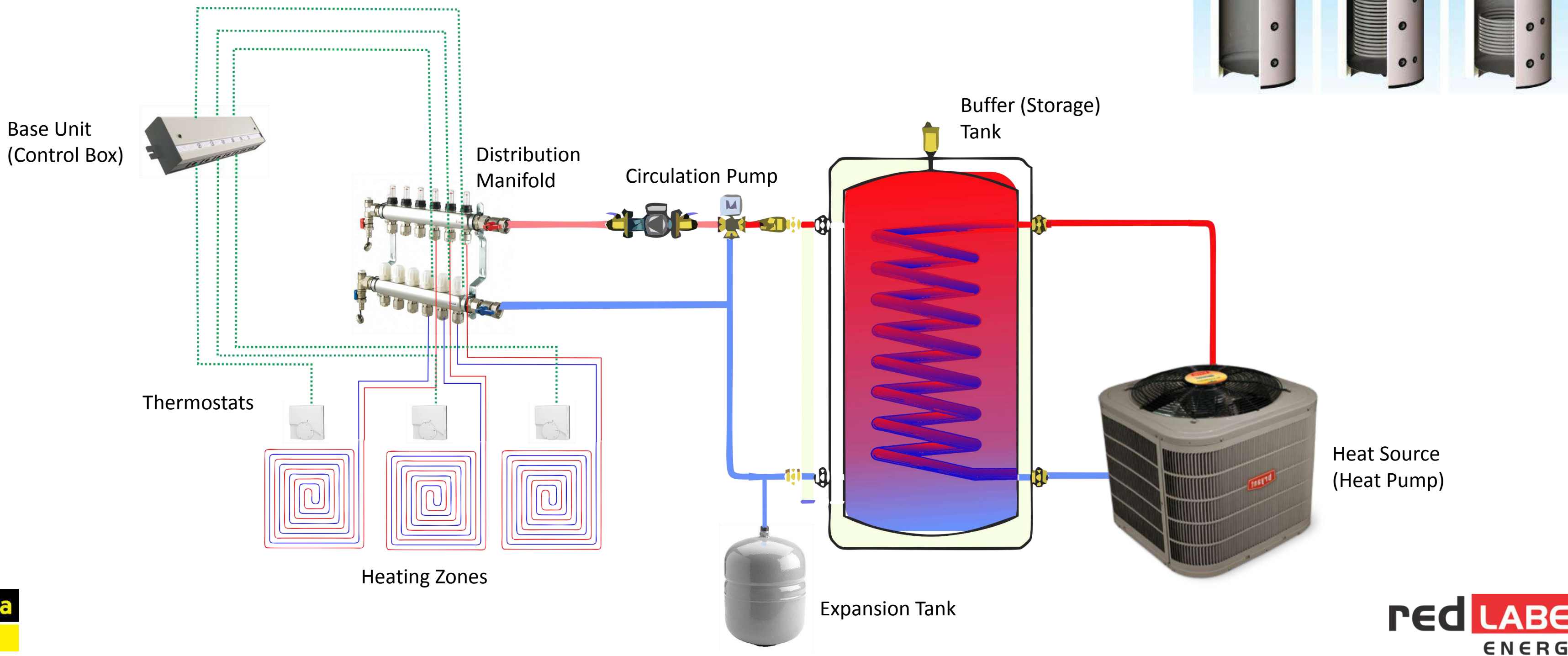
viega

red LABEL
ENERGY

Hydro System Overview

There are various configurations of systems available. Here are examples of the most common.

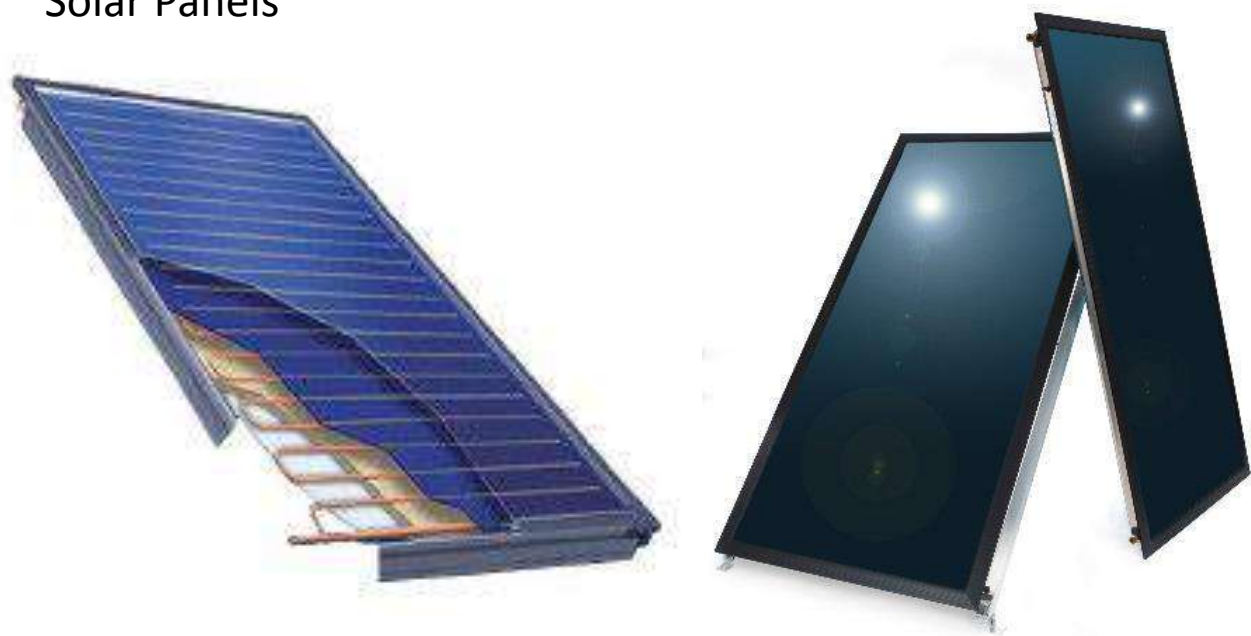
Buffer (Storage) Tank with exchanger coil



Alternate Heat Sources

Apart from Heat Pumps, there are many other types of Heat Sources. Often a project will use two types – a primary and a secondary. For example a client may want solar panels for the energy savings, but may also install a Heat Pump for cloudy days.

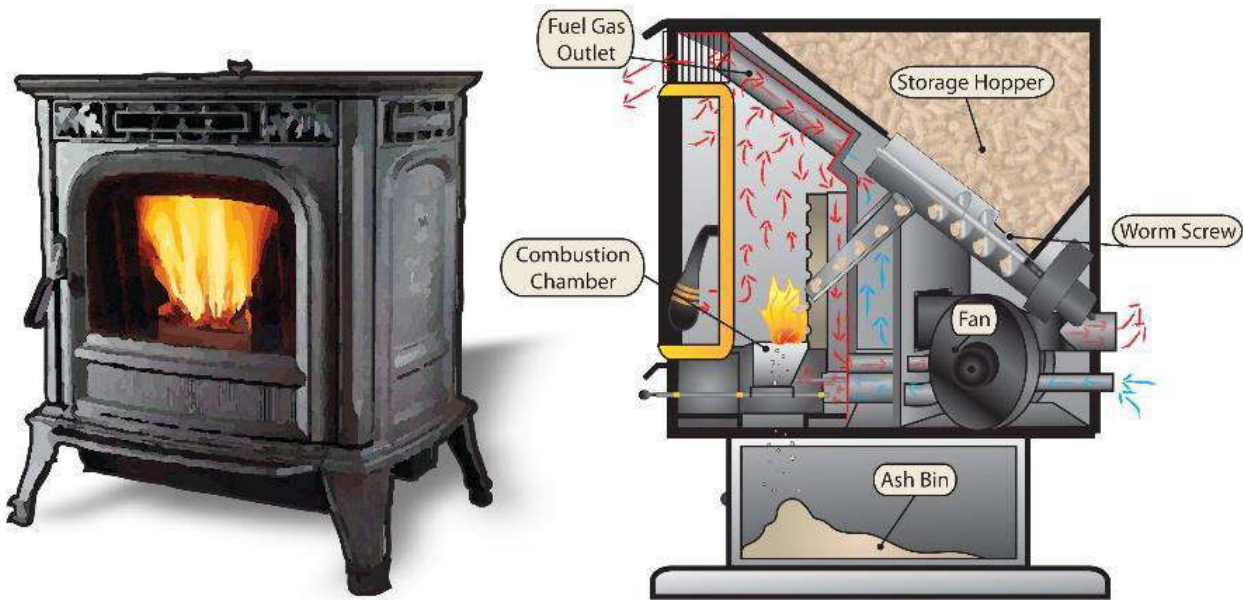
Solar Panels



Heat Pumps



Pellet Burners



Gas Burners

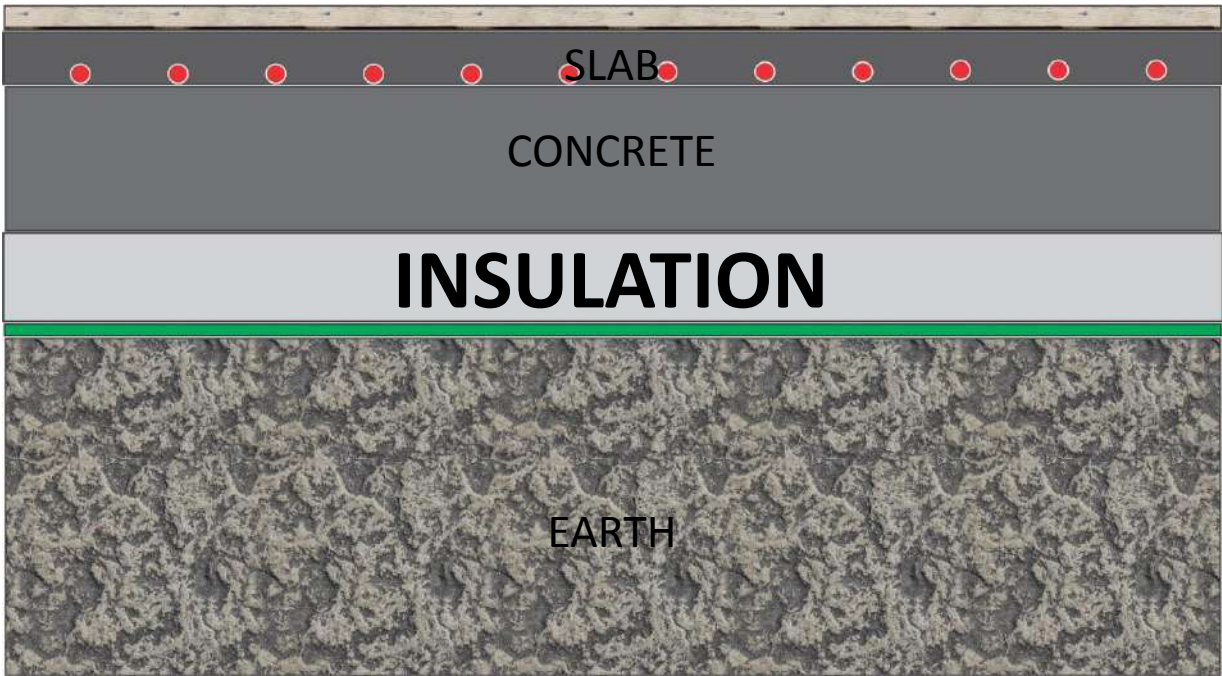


Insulation Placement

With hydronic floor heating, the aim is to save energy on the running cost. It is therefore VITAL that the room is well insulated. Certain buildings are insulated in different ways, and this affects how the hydro heating system is installed.

In some instances, the insulation is installed BENEATH the Concrete Slab of the building.

Thus the pipe is fixed into concrete.



In this option, the screed binds onto the concrete surface bed, thus creating a very secure and solid surface.

In some instances, the insulation is installed ABOVE the Concrete Slab of the building.

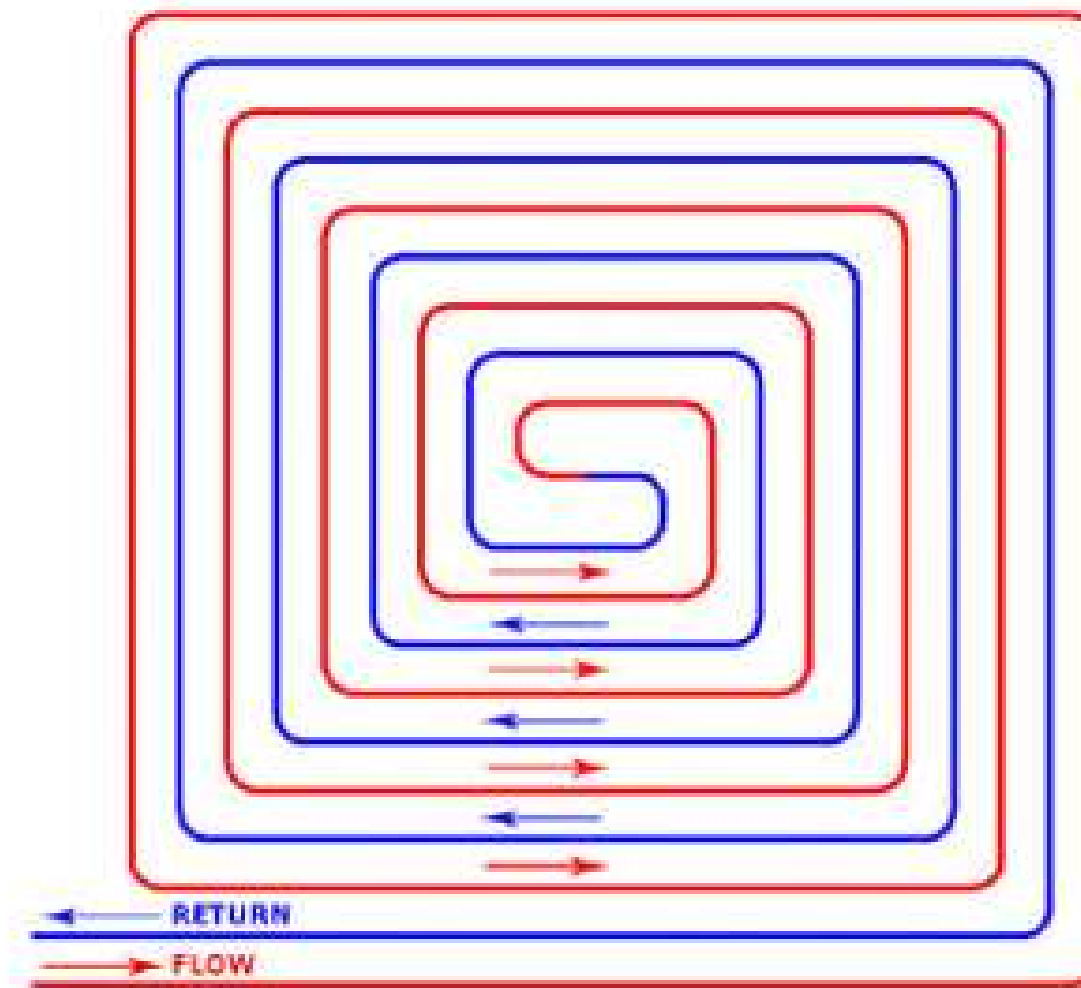
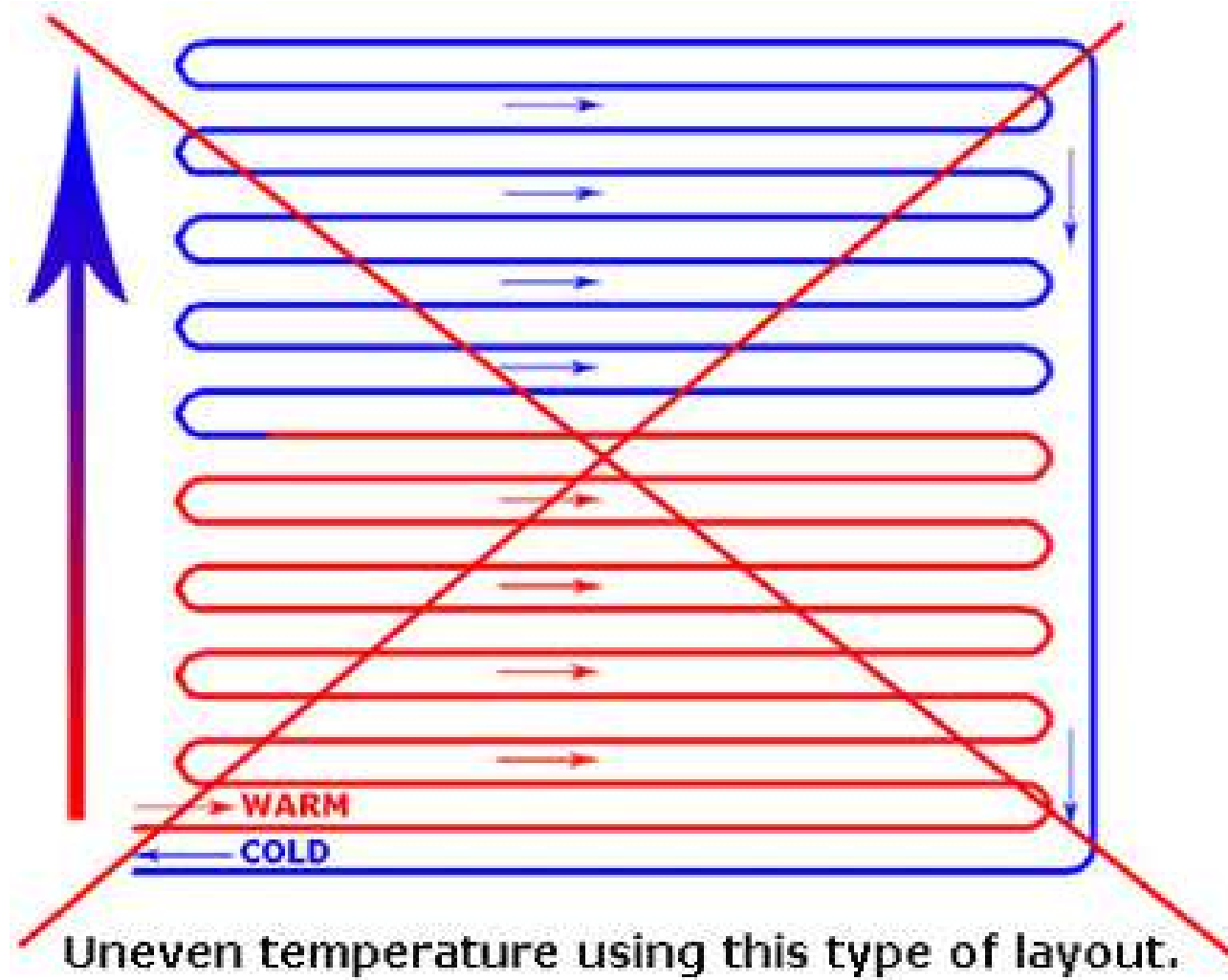
Thus the pipe is fixed into the insulation.



In this option, WALL BARRIERS are used, to create a ‘floating screed’. It is important that this screed is properly engineered to ensure no cracking in the floor, as it is not as structurally secure as the first option shown.

Piping Patterns

The pattern in which the piping is installed is very important, as unlike electrical floor heating, the heat spreads through the pipe gradually. Therefore the pattern plays a large part in ensuring the room is heated evenly.



Fixing the Pipe to Insulation – Plastic Staples

Insulation is ABOVE the slab, the piping must be affixed to the insulation itself. The piping can be stapled to the insulation, using a stapler and staples or clips



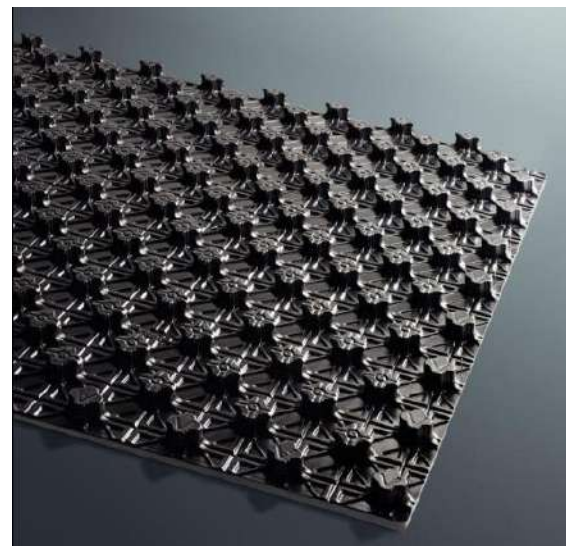
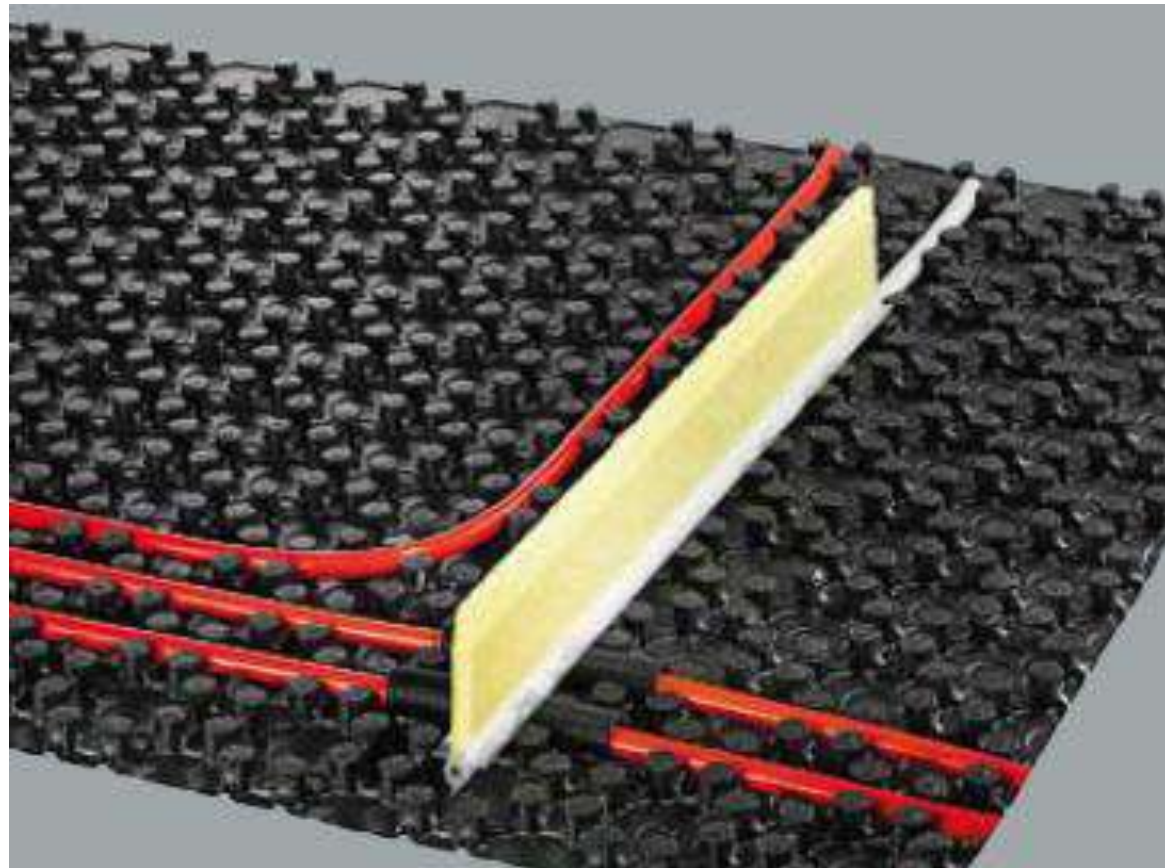
Fixing the Pipe to Insulation – Cable Tied to Mesh

If insulation is ABOVE the slab, the piping must be affixed to the insulation itself. For a floating screed, a re-enforcing steel mesh is required to strengthen the screed. The heating pipe can be cable-tied to this mesh.



Fixing the Pipe to the Insulation – Using a Knobbed Panel

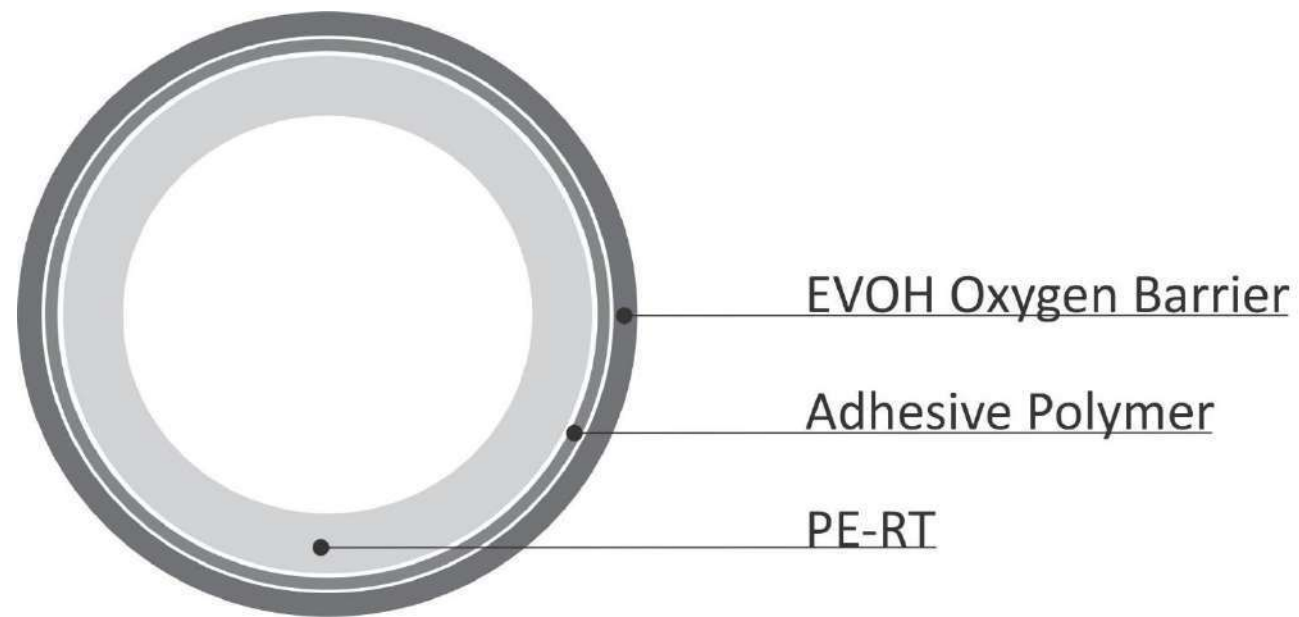
If the insulation is ABOVE the slab, the piping must be affixed to the insulation itself. A pre-manufactured knob plate or base plate can be used, which allows for a very easy installation but is more costly than other options.



A Closer Look at the Pipe

Viega Fonterra pipe is a multi-layer pipe, with 3 layers altogether.

The Viega Fonterra range includes a 17mm diameter 'PE-RT EVOH' pipe. These are sold in 240m and 650m coils.



PE-RT is the type of plastic that the pipe is made of.
This stands for '**Polyethylene of Raised Temperature Resistance**'.

EVOH is **Ethylene Vinyl Alcohol**. It is an oxygen barrier, meaning that no oxygen can pass through it. This is needed because over time, oxygen can seep in through the PE-RT.

Oxygen Barrier pipe is considered vital for floor heating, as the systems are at their most effective and require the least maintenance when there is ZERO oxygen in the system.

Oxygen in the system can cause pumps to malfunction, air-blocks to occur, and could also cause mold or fungus to develop in the system, clogging the system.

The EVOH Oxygen Barrier can be damaged and must be carefully protected during installation.

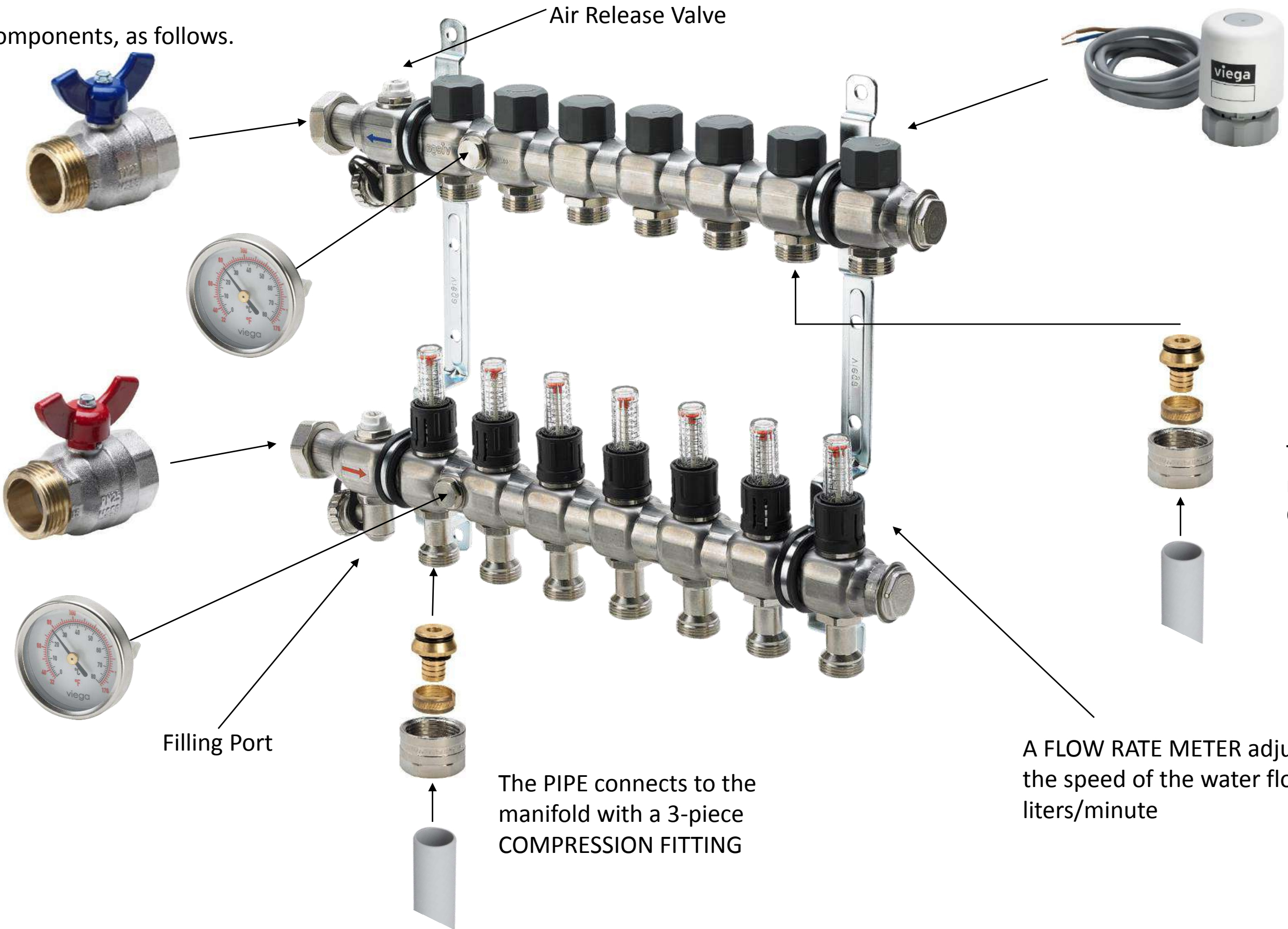


A Closer Look at the Manifold and Connections

Manifold consist of many components, as follows.

BALL VALVES are fitted to the manifold so that the water supply can be shut off if required

TEMPERATURE GAUGES are inserted into the MANIFOLD so the installer / homeowner can easily assess the incoming and outgoing water temperature.



Air Release Valve

The ACTUATOR or SOLENOID connects on the top row

Filling Port

The PIPE connects to the manifold with a 3-piece COMPRESSION FITTING

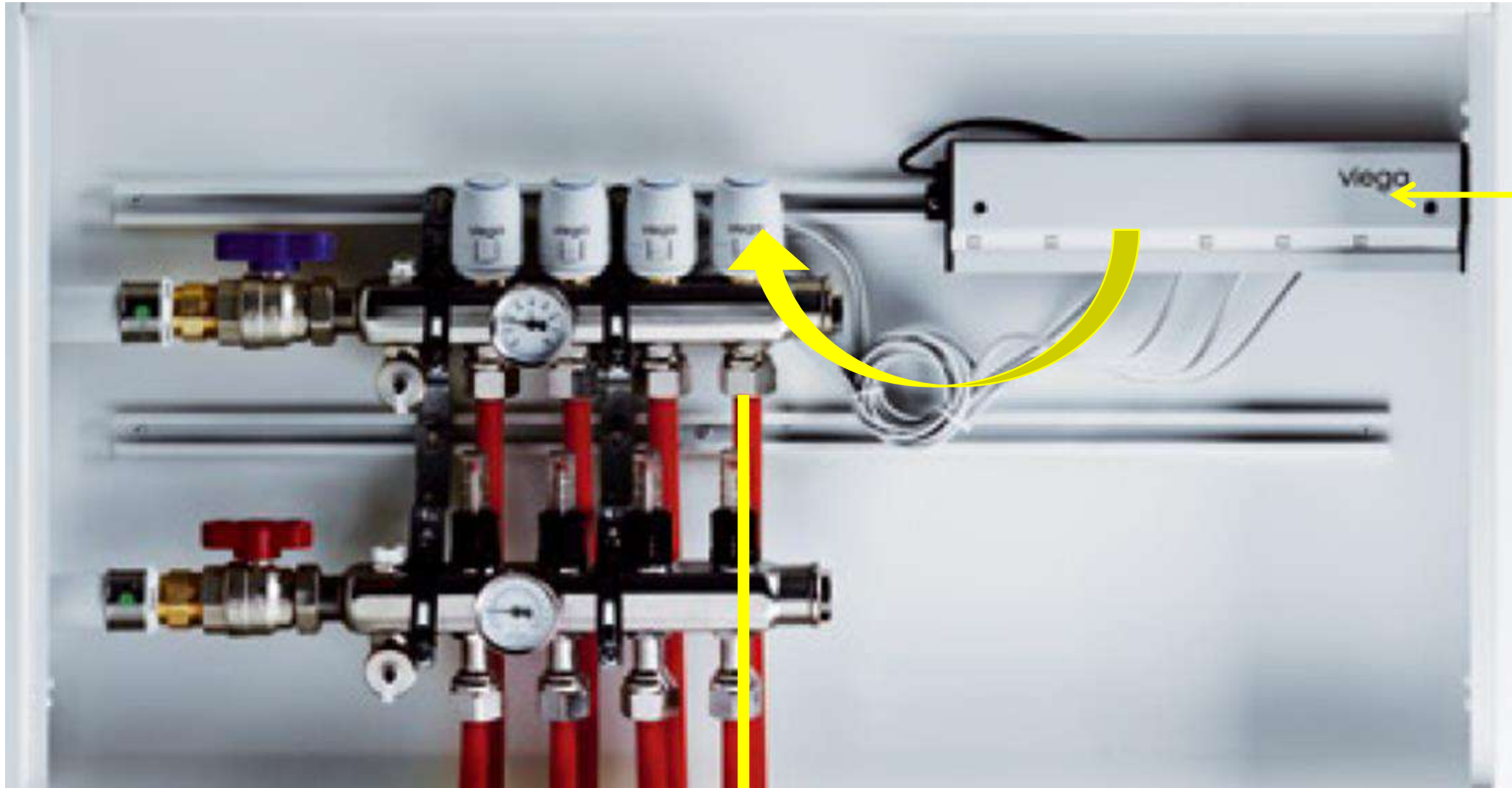
A FLOW RATE METER adjusts the speed of the water flow – liters/minute

The PIPE connects to the manifold with a 3-piece COMPRESSION FITTING



Thermostats

When the thermostat in the room senses that heat is required, it turns the heating 'ON'. This simply sends a signal to the Base Unit, which in turn turns on power to the Actuators, which open the 'tap' and allow the warm water to flow through the pipes.



Warm water flows to room



Connections to the manifold

Every pipe zone is run through the building and connected to the distribution manifold. There can be multiple manifolds in one building, depending on the size of the heated area.



Heatmiser Thermostats

Our supplier has secured the agency for Heatmiser thermostats in SA. Certain models are designed specifically for use with hydronic heating systems.



SMART STAT WiFi Smart Thermostat

SmartStat is our all-new WiFi Connected Thermostat with full colour LCD. Now is the time to take control of your multi zone heating and hot water system from anywhere. What's more, our Geo Location feature ensures you never heat an empty home.

Headline Information

- Mounting Type**
Flush mounting
- Temperature Range**
05-35°C
41-95°F
- Indication Type**
2.8" Full Colour LCD
- Dimensions**
95x95x45mm
(15mm installed)
- E.U. Back Box**


Key Features

- Control from your SmartPhone**
SmartStat has built in WiFi so connects directly to your Home Router. As SmartStat connects to your SmartPhone via our cloud server setup is a dream and will take minutes – no technical setup here. SmartStat is compatible with iPhone & iPad and with Android Smartphones & Tablets.
- Heat or Timer Option**
The SmartStat can be setup to work in either Heat or Timer mode, so is perfect for controlling heating zones or timer zones such as towel rails and hot water.
- Auto Dimming**
The SmartStat Display can be programmed to automatically dim in low light – making SmartStat perfect for bedrooms.
- Frost Protection**
Don't worry we have your home covered. The in built frost protection feature will protect your home against the elements.
- Thermostat and Programmer in One**
Gone are the days of having a separate programmer and thermostat. SmartStat is both in one so you no longer have to fiddle with the awkwardly positioned thermostat.
- Comfort Programming**
Now is the time to re-think how you heat your home. SmartStat lets you have different temperatures at different times of the day, not only an energy saving feature but one that creates for a more comfortable living environment too. The Self Learning Optimum Start feature will automatically calculate when your heating should be on, so it's one less thing for you to worry about.
- Geo Location**
Geo Location uses the mobile phone masts, nearby WiFi and your GPS to calculate your position. When you setup Geo Location on the SmartStat App, you set a leaving and returning trigger. When you pass these triggers, SmartStat will adjust the temperature in your home automatically.
- Multi-Zone**
Up to 32 SmartStats can be controlled within one location without the need for any network hub. Global features such as Temperature Hold, Key Lock and Home/Away are all available on the SmartStat App.
- Multi User**
Multiple users can login to the SmartStat App and take control of the heating & hotwater from anywhere. In addition, Geo Location can be configured on each persons device meaning the heating is turned off when the last person has left home and back on when the first person returns.

FEATURES	SMARTSTAT	Available in 3 Colours
Temperature Range	05-35°C 41-95°F	 Sapphire Black
Blue Back Lit Screen	Y	
Non-Programmable Mode	Y	
5/2 Day Programming Mode	Y	 Glacier White
7 Day Programming Mode	Y	
24 Hour Programming Mode	Y	
Number of Heating Levels	4	 Platinum Silver
Optimum Start	Y	
Number of HW Times	0	
Holiday Function	Y	
Temperature Hold Function	Y	
Temperature Override	Y	
Temperature Override Limit Frost Protection	Y	
App Control	Y	
°C / °F Option	Y	
Remote Air Sensor Connection	Y	
Built In Air Sensor	Y	
Floor Sensing Mode	Y	
Floor Sensor Included	N	
Max Switching Current	3A	
Accuracy	+/- 1°C	
Adjustable Switching Differential	+/- 1-3°C	
Supply	230VAC	
Output	Volt Free Contact	
Installed Dimensions	95x95x15mm (L,H,D)	

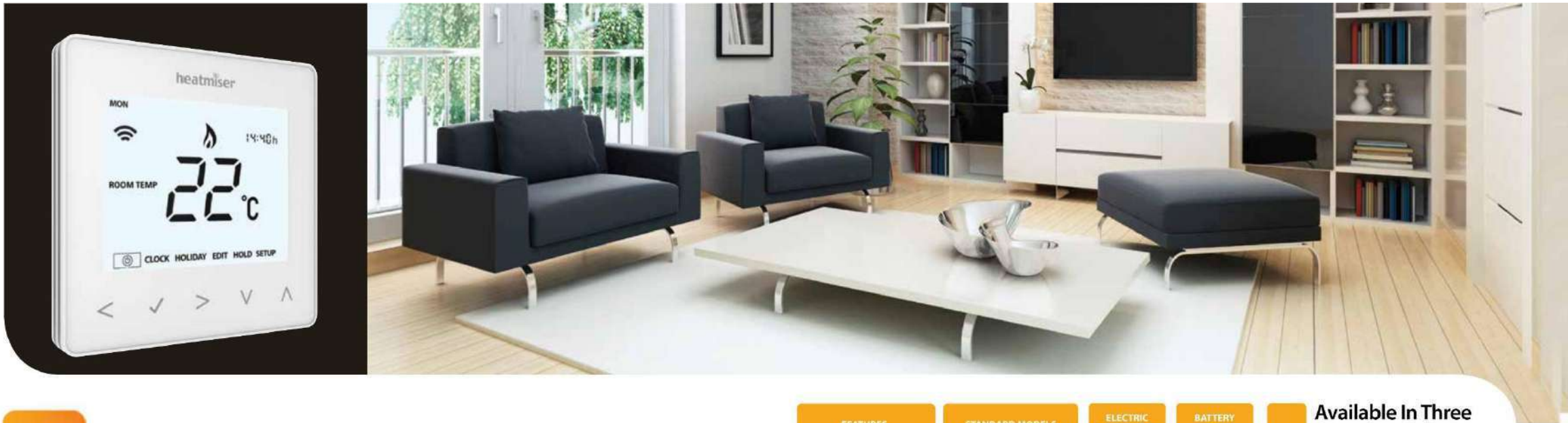
Thimble Sensor
Part Ref: Heatmiser Thimble Sensor
The Heatmiser Thimble sensor is ideal for discrete temperature monitoring and is compatible with all Heatmiser Thermostats with a remote sensor connection.

Remote Sensor Probe
Part Ref: Heatmiser MISC103
This remote sensor probe can be used to measure air and floor temperature. This probe is supplied with a 3 meter cable which can be extended to 20 meters if required.



Heatmiser Thermostats

Our supplier has secured the agency for Heatmiser thermostats in SA. Certain models are designed specifically for use with hydronic heating systems.



Modern touch technology

The neoStats have been designed to be simple to use and make programming simple with the new intuitive menu navigation. The neoStats can be controlled from anywhere thanks to the plug and play neoHub, and are available in Glacier White, Sapphire Black and Platinum Silver.

Headline Information

Key Features

Mounting Type
neoStat Flush Mounting
neoAir Surface/Desk Stand

Temperature Range
05-35°C
41-95°F

Lock Facility
Yes - All models

Indication Type
LCD with Back Light

Dimensions
neoStat 85x85x15mm (L,H,D)
neoAir 85x85x26mm

E.U. Back Box
neoStat Only



Modern Appearance
The neoStat and neoAir have been designed to compliment any home décor.

Heat or Timer Option
The neoStat has been designed to work as a thermostat or timer, selectable in software. The neoAir can be set to work as a thermostat, timer or combined model that offers heating and timer control – perfect for controlling heating and hot water from a single device. Flexible programming means reduced SKU's for stockists.

Easy Navigation
The neoStat/neoAir series offer an easy to navigate programming system, providing all of the options across the bottom of the back lit display.

Energy Saving Optimum Start
Calculates the amount of heat up time required to ensure your home is warm when you wake and return home. This is automatically optimised throughout the year to save you money.

Wireless Networking
The neoStat and neoAir communicate wirelessly to the neoHub to offer a reliable and scalable network system. The mains powered neoStat automatically repeats the data signal from other neoStat/neoAir in the home. If there are no neoStat's installed, the neoAir communicates directly with the neoHub and so the neoPlug or Boost can be used to extend the communication distance.

Soft Touch Operation
Modern touch sensitive keys provide a clean smooth interface, adding further to the premium feel of the neoStat series.

Temperature Hold Facility
Allows you to hold a set temperature for a specific duration - ideal for parties. After which, the thermostat will revert back to the programmed setting.

Battery Model
The neoAir is powered by 4 AAA batteries and provides a totally wire free solution. The neoAir communicates with the UH8-RF and RF Switch Receivers and can be paired to the neoHub to provide App Control.

Remote Sensing
neoStat can be used with a remote air and remote floor sensor, whereas the neoAir has one remote sensor connection that can be used for remote air or floor temperature monitoring.

FEATURES	STANDARD MODELS		ELECTRIC FLOOR MODEL	BATTERY MODEL
	neoStat	neoStat-tmr	neoStat-e	neoAir
Thermostat Mode	Y	Y	Y	Y
Timer Mode	Y	Y	Y	Y
Heating & Timer Mode	N	N	N	Y
Temperature Range	05-35 °C 41-95 °F	N/A	05-35 °C 41-95 °F	05-35 °C 41-95 °F
Back Lit Screen	Y	Y	Y	Y
Non-Programmable Mode	Y	N	Y	Y
5/2 Day Programming Mode	Y	Y	Y	Y
7 Day Programming Mode	Y	Y	Y	Y
24 Hour Programming Mode	Y	Y	Y	Y
Number of Heating Levels	4	N/A	4	4
Optimum Start	Y	N	Y	Y
Number of HW Times	0	4	0	4
Holiday Function	Y	Y	Y	Y
Temperature Hold Function	Y	N	Y	Y
Temperature Override	Y	N	Y	Y
Temperature Override Limit	Y	N	Y	Y
Frost Protection	Y	N	Y	Y
App Control	Y	Y	Y	Y
°C / °F Option	Y	N	Y	Y
Remote Air Sensor Connection	Y	N	Y	Y
Built In Air Sensor	Y	N	Y	Y
Floor Sensing Mode	Y	N	Y	Y
Floor Sensor Included	N	N	Y	N
Max Switching Current	3A	3A	16A +/-	N/A
Accuracy	+/- 1°C	N/A	1°C +/-	+/- 1°C
Adjustable Switching Differential	+/- 1-3°C	N/A	1-3°C	+/- 1-3°C
Supply	230VAC	230VAC	230VAC	4 x AAA
Output	Volt Free Contact	Changeover	230VAC	N/A
Installed Dimensions	85x85x15mm (L,H,D)		85x85x15mm (L,H,D)	85x85x26mm (L,H,D)
Wireless Switching to UH8/RF Switch	N	N	N	N

Available In Three Stunning Colours



neoStat - Glacier White



neoAir - Glacier White



Thimble Sensor

Part Ref: Heatmiser Thimble Sensor
The Heatmiser Thimble sensor is ideal for discrete temperature monitoring and is compatible with all Heatmiser Thermostats with a remote sensor connection.



Remote Sensor Probe

Part Ref: Heatmiser MISC103
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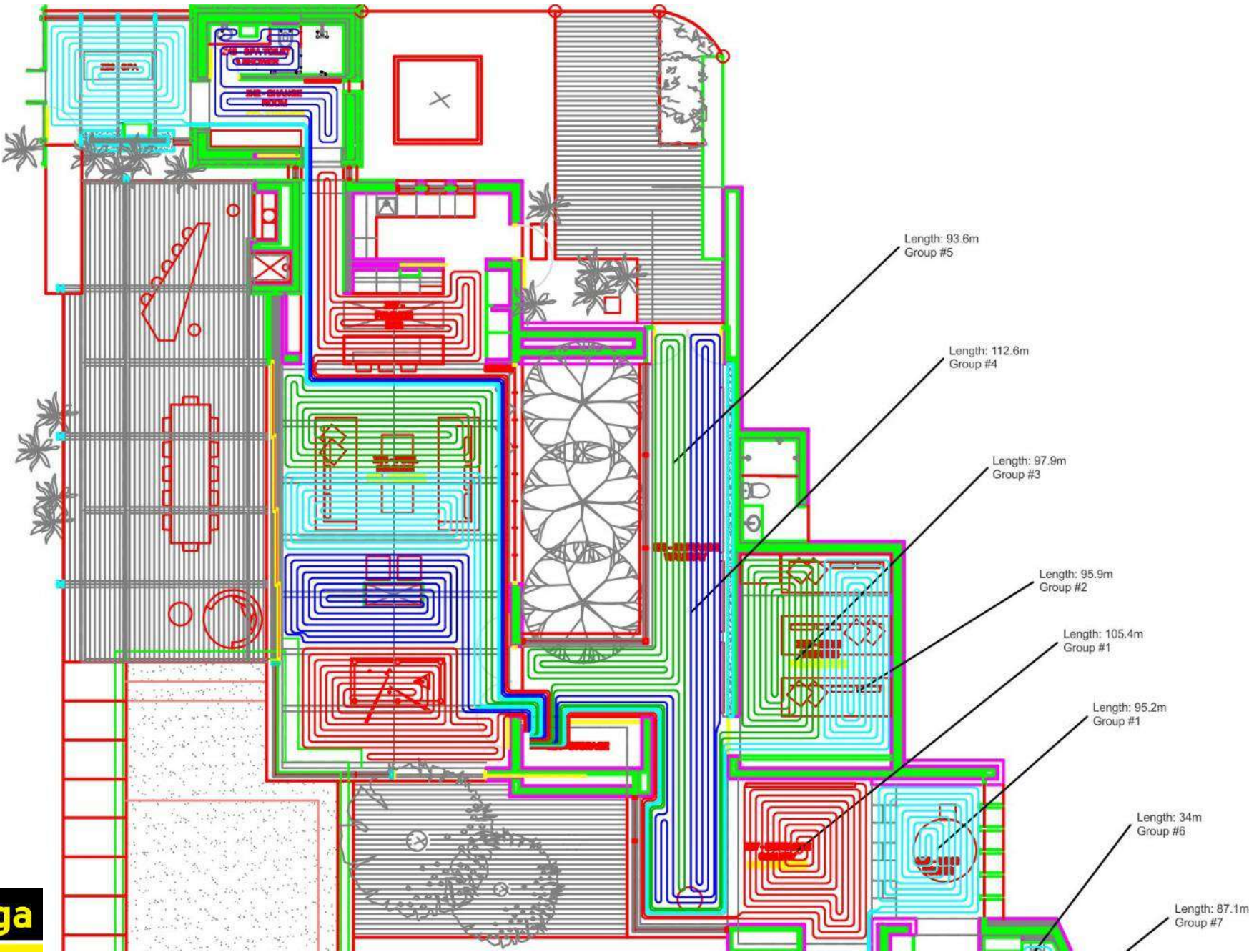


Drafting and Design Services

We offer a **Detailed Design Service** at a cost (confirmed depending on project size).

The client must provide Red Label Energy with the full specification and AutoCAD drawings of the home. The following information will then be provided.

1. Fully marked up drawings showing pipe layout and manifold positions.
2. A detailed quotation on all the components required.



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Quotation

QUOTATION: 1234-546
DATE: 2016/09/01

Customer: Hydro Installations (Pty) Ltd
Project: House Smith
Contact:
Tel: 0861 123 4567
Email: info@hydroinstallations.co.za

SALESPERSON	DESIGN REF	SHIP DATE	SHIP VIA	TERMS
SMI-47-A		10/1/16	Collect	30 Days

ARTICLE	DESCRIPTION	UOM
WBMAN106	Manifold 6 Port, Stainless Steel	Each
WBMAN109	Manifold 9 Port, Stainless Steel	Each
WBMAN107	Manifold 7 Port, Stainless Steel	Each
WBMAN112	Manifold 12 Port, Stainless Steel	Each
WBMAN104	Manifold 4 Port, Stainless Steel	Each
WBMAN111	Manifold 11 Port, Stainless Steel	Each
WBCABCD01	Concealed Manifold Cabinet, 2-5 circuits (W530 X H690-790mm)	Each
WBCABCD02	Concealed Manifold Cabinet, 6-9 circuits (W830 X H690-790mm)	Each
WBCABCD03	Concealed Manifold Cabinet, 10-13 circuits (W1130 X H690-790mm)	Each
WBACT001	Actuator 230 Volt	Each
WBCF001	Compression Fitting, 3/4" x 17mm	Each
WBBV001	Ball Valve Set, Red & Blue	Set of 2
WBTG001	Temperature Gauge	Each
WBPGR001	Pipe Guide 90°, 15-17mm Pipe, Plastic / Black	Each
COMFFSM	Oi Comfort, Manual Thermostat (Non-Programmable) Floor Sensor, 3	Each
WBBU003	Base Unit, 230 V, 10 Zones, Incl pump module	Each
WBS001	Standard Tacker Staple, Plastic, 40mm (15-20mm pipe)	Each
WBEIN001	Edge Insulation Strip, 150/8 (25mtr roll)	Meter
WBPE116-2	Pipe, PE-RT 16 X 2mm (supplied in 200mtr rolls)	Meter
WBPE116-6	Pipe, PE-RT 16 X 2mm (supplied in 600mtr rolls)	Meter

This quotation is valid for 14 days.

NOTES AND COMMENTS
Please refer to the detailed drawings provided with this quotation for further information. This quotation excludes all components from the manifold to the heat source, as well as the heat source itself. Pricing shown is for supply only of product, and excludes delivery.

The above quantities are based on the theoretical requirements for the site. On-site conditions may cause quantities to change. Additional items required will be invoiced accordingly. Warmup does not take responsibility for the performance of the system.

Quotation Accepted

Name: Signature: Date:



Directors: G C Pudney, N Pudney, R E Pudney
VAT: 430 023 5845 Reg: 2007/024013/23

Drafting and Design Services

3. A Pipe Cutting Schedule, to minimize pipe wastage and provide the approximate flow rate per zone.

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Cutting Schedule and Flow Rates

Customer: Hydro Installations (Pty) Ltd

Project: House Smith

QUOTATION: 1234-546

DATE: 2016/09/01

Warmup Pipe, 16mm, PE-RT Evoh - Roll Size: 600m

Manifold No.	Loop No.	Area	Loop length	Flow (L/m)
2	5	Library	102 m	2.40
4	12	Bar Area	92 m	2.18
4	7	Change Room / Toilet	86 m	2.06
1	4	Study	82 m	2.00
6	9	Bedroom 1	67 m	1.84
2	4	Piano Room	65 m	1.80
5	2	Master Dressing	61 m	1.73
5	1	Master Ensuite	35 m	1.58

Surplus:

10 m

Warmup Pipe, 16mm, PE-RT Evoh - Roll Size: 600m

Manifold No.	Loop No.	Area	Loop length	Flow (L/m)
4	6	Bar Area	99 m	2.48
4	3	Home Theater	98 m	2.43
4	2	Home Theater	97 m	2.43
2	9	Dining Room	94 m	2.39
4	9	Bar Area	94 m	2.18
3	7	Scullery	87 m	2.18

Surplus:

31 m

Warmup Pipe, 16mm, PE-RT Evoh - Roll Size: 600m

Manifold No.	Loop No.	Area	Loop length	Flow (L/m)
3	1	Gallery	98 m	2.35
6	6	Guest Bedroom	90 m	2.16
6	5	Guest Bedroom	89 m	2.16
4	11	Bar Area	87 m	2.18
6	4	Guest Dress / En Suite	86 m	2.08
2	3	Living Room	83 m	2.11
1	3	Play Room En Suite	50 m	1.20

Surplus:

17 m

Warmup Pipe, 16mm, PE-RT Evoh - Roll Size: 200m

Manifold No.	Loop No.	Area	Loop length	Flow (L/m)
2	6	Library	89 m	2.40
1	6	Study	60 m	2.00
1	2	Play Room	44 m	1.58

Surplus:

7 m

Warmup Pipe, 16mm, PE-RT Evoh - Roll Size: 200m

Manifold No.	Loop No.	Area	Loop length	Flow (L/m)
4	8	Spa	97 m	2.83
1	5	Study	68 m	2.00
3	6	Guest Toilet	32 m	0.85

Surplus:

3 m

Directors: G C Pudney, N Pudney, R E Pudney

VAT: 430 023 5845 Reg: 2007/024013/23



4. A Thermostat Summary, providing a breakdown of the zones, thermostats and Base Units (Control Units).

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Thermostat Summary

Customer: Hydro Installations (Pty) Ltd

Project: House Smith

QUOTATION: 1234-546

DATE: 2016/09/01

MANIFOLD ONE

WBMAN106 - Manifold 6 Port, Stainless Steel

Thermostat 1	Loop 1	Play Room
	Loop 2	Play Room
Thermostat 2	Loop 3	Play Room En Suite
	Loop 4	Study
Thermostat 3	Loop 5	Study
	Loop 6	Study

MANIFOLD TWO

WBMAN109 - Manifold 9 Port, Stainless Steel

Thermostat 4	Loop 1	Living
	Loop 2	Living
	Loop 3	Living
Thermostat 5	Loop 4	Piano
Thermostat 6	Loop 5	Library
	Loop 6	Library
Thermostat 7	Loop 7	Dining
	Loop 8	Dining
	Loop 9	Dining

MANIFOLD THREE

WBMAN107 - Manifold 7 Port, Stainless Steel

Thermostat 8	Loop 1	Gallery
	Loop 2	Kitchen
Thermostat 9	Loop 3	Kitchen
	Loop 4	Kitchen
Thermostat 10	Loop 5	Kids Study
Thermostat 11	Loop 6	Guest Toilet
Thermostat 12	Loop 7	Scullery

MANIFOLD FOUR

696 054 - Manifold 12 Port, Stainless Steel

Thermostat 13	Loop 1	Entrance Gallery
Thermostat 14	Loop 2	Home Theater
	Loop 3	Home Theater
Thermostat 15	Loop 4	Entrance Walkway
Thermostat 16	Loop 5	Entrance Walkway
Thermostat 17	Loop 6	Pavilion Bar
Thermostat 18	Loop 7	Change Room / Toilet
	Loop 8	Spa
Thermostat 19	Loop 9	Pool Pavilion
	Loop 10	Pool Pavilion
	Loop 11	Pool Pavilion
	Loop 12	Pool Pavilion

Directors: G C Pudney, N Pudney, R E Pudney

VAT: 430 023 5845 Reg: 2007/024013/23



THANK YOU FOR YOUR TIME AND
ATTENTION.