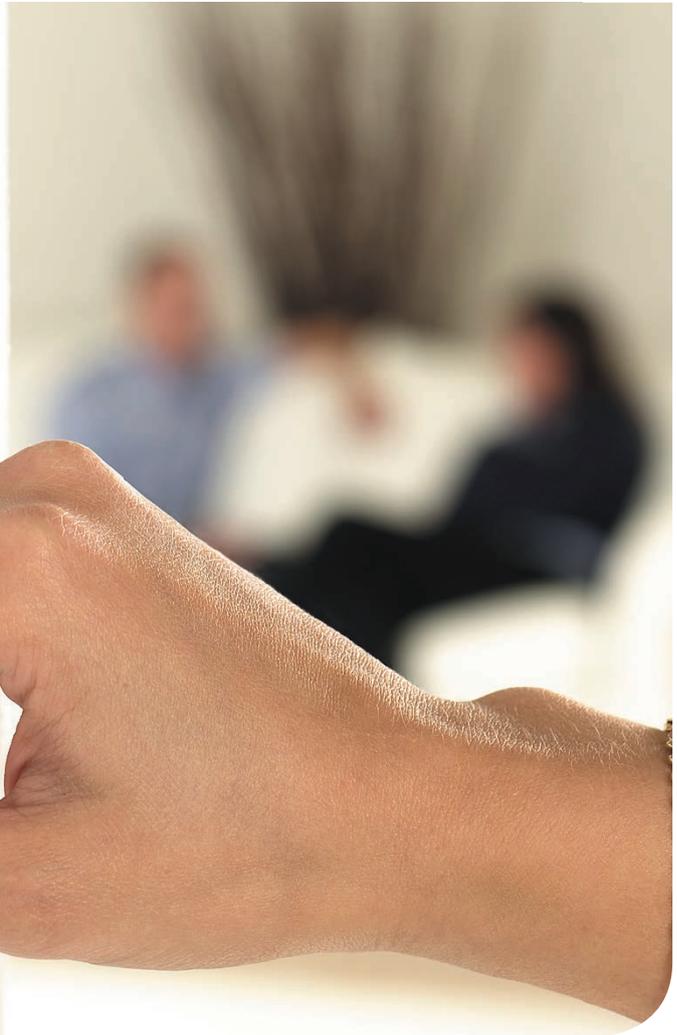




Underfloor Heating





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Introduction

Underfloor Heating

Why Choose Underfloor Heating?

Underfloor Heating (UFH) using piped warm water is a modern and energy-efficient option with economical running costs for heating residential, commercial and other buildings.

Underfloor Heating Offers Many Benefits:

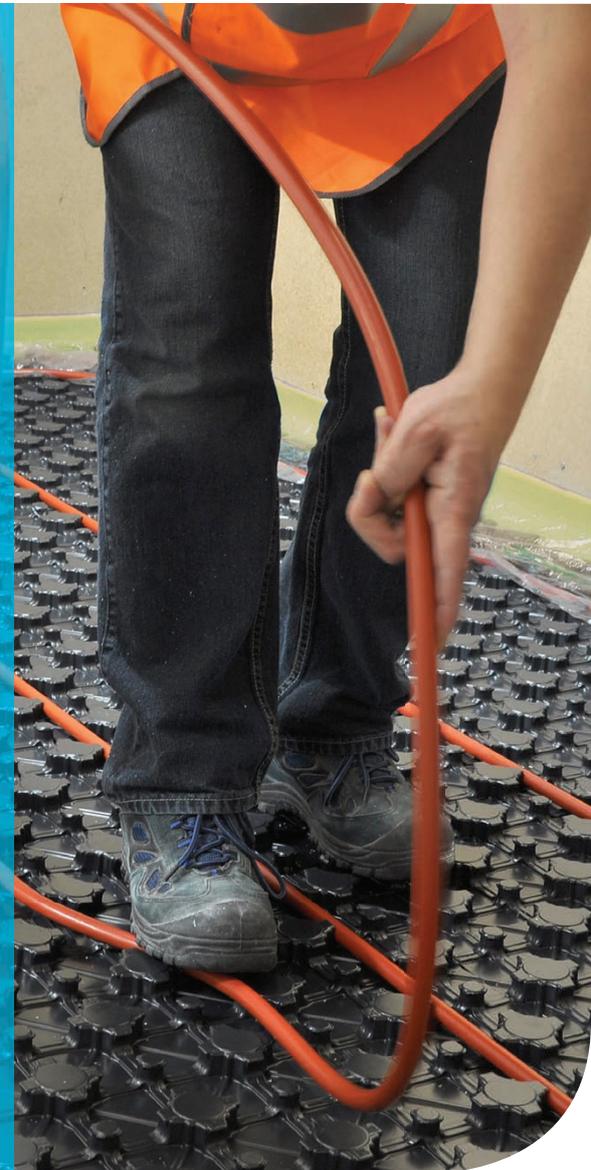
- ⊕ Energy-efficient system requires lower water temperatures with low running costs.
- ⊕ More even room temperatures ensure all round comfortable warmth.
- ⊕ Silent running: no expansion creaking or water flow noise.
- ⊕ No wall mounted radiators.
- ⊕ Healthy environment – less dust.
- ⊕ Greater safety – no exposed hot surfaces.

Why Wavin UFH?

Wavin Ireland Limited based in Balbriggan, Co. Dublin since 1958 is a manufacturer and supplier of plastic pipes. For 30 years Wavin has built a reputation throughout Europe for manufacturing professional plumbing systems which are easy to install and come with market-leading guarantees.

Benefits of Wavin UFH:

- ⊕ AutoCAD pipe layout drawing by Wavin.
- ⊕ Unique Manifold body system provides maximum installation flexibility.
- ⊕ Wavin UFH pipe is available in circuit lengths.



The three essential elements for a Wavin UFH system - screeded floor applications.

Plumbed underfloor heating comprises three key elements that work together to deliver the required heating performance and effect:

1. Floor Systems: incorporating UFH pipe to create the pipework circuits within the floor that will emit heat.

The systems available are:

- ⊕ Staples.
- ⊕ Staples and Rail.
- ⊕ System Plates.

2. Manifold: to provide flow and return circulation of warm water at the correct temperature and flow rate to ensure an even, comfortable temperature across the whole floor surface.

3. Controls: to monitor water and air temperature and signal the heat source. In effect the nerve centre of the installed system. The options available for time and temperature control range from wired and wireless systems to fully networked systems that can be controlled on your mobile device.

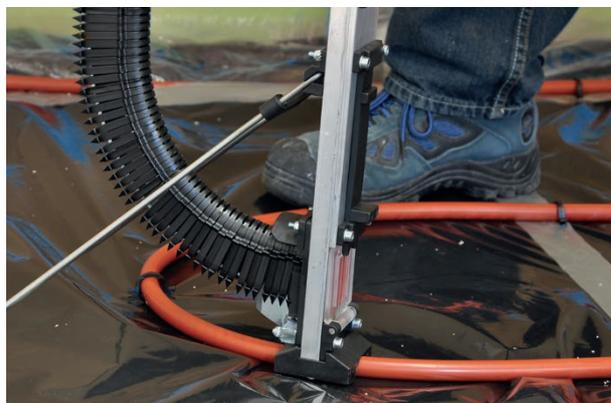
Control systems available are:

- ⊕ 24V Wired or Wireless.
- ⊕ 230V Wired or Wireless.

Underfloor Systems

Staples System

This system comprises of UFH pipe fixed directly to the rigid insulation using 40mm or 60mm staples. This offers the installer an economical material cost and provides full flexibility to set the pipe layout and spacing to suit specific project requirements. Suitable for irregular shaped floor areas.

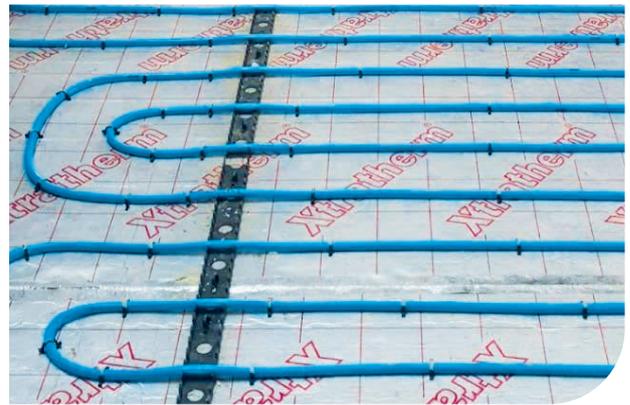
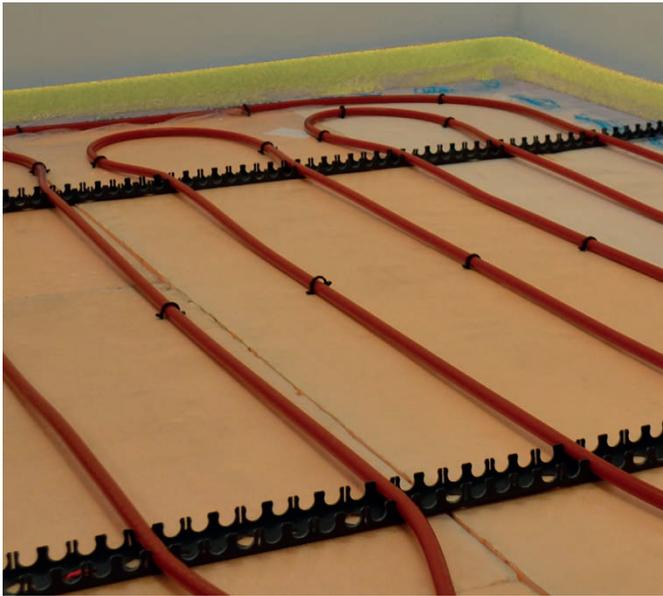


	Item	Description	Nom Dia	Product Code	Pack Qty
	Staples (60mm) Staples (40mm)	Plastic staples used for fixing UFH pipe directly to the insulation panels.	16mm	3071057 3034037	300 600
	Edge expansion foam (25 X 0.15m)	Typically installed around the perimeter of a room to allow for thermal expansion of the floor screed.		3071100	1
	Cold forming bend	Used to shape and support the UFH pipe from the horizontal plane to the vertical plane below the manifold.	16mm	3033959	1 per pack
	UFH pipe coils (70m – 500m)	Used for the distribution of the heated warm water to facilitate the heat transfer within the floor. For further product information refer to page 6.	16mm	Refer to page 6	1

Underfloor Systems

Staples and Rail System

This system comprises of 2m long rails fixed directly to the rigid insulation using track rail staples (red). These provide a simple and effective guidance system for ease of installation of the UFH pipe along with 40mm or 60mm staples which are also used to fix the UFH pipe to the rigid insulation. This system ensures the accuracy of the pipe spacing centres and is suitable for all installations.



	Item	Description	Nom Dia	Product Code	Pack Qty
	Track rail (2m)	Rail guidance system for accurate and easy installation of UFH pipe.	16mm	3066742	16
	Track rail staples (red)	Track rail staples (red) used for fixing the track rail to the rigid insulation.		4038834	100
	Staples (60mm) Staples (40mm)	Plastic staples used for fixing UFH pipe directly to the insulation panels.	16mm	3071057 3034037	300 600
	Edge expansion foam (25 X 0.15m)	Typically installed around the perimeter of a room to allow for thermal expansion of the floor screed.		3071100	1
	Cold forming bend	Used to shape and support the UFH pipe from the horizontal plane to the vertical plane below the manifold.	16mm	3033959	1 per pack
	UFH pipe coils (70m - 500m)	Used for the distribution of the heated warm water to facilitate the heat transfer within the floor. For further product information refer to page 6.	16mm	Refer to page 6	1

Underfloor Systems

System Plates

This system comprises of plastic sheets (1.275m x 0.975m) with pre-formed grips to hold the pipe in position. These are fixed on top of insulation panels with plate tack fasteners (red) and hold the pipe in place before the floor is screeded. This solution allows fast installation and ensures even spacing of the pipe. The sheets can be cut to size with a utility knife and lock together to prevent any screed ingress under the plates. This guided system is ideal for large floor plan areas.



	Item	Description	Nom Dia	Product Code	Pack Qty
	System plate (1.275m x 0.975m)	Plastic sheet with preformed grips for accurate and easy installation of UFH pipe.	16mm	3071058	18
	Plate tack fastener (red)	Plate tack fastener (red) used for fixing the system plate to the rigid insulation.		3071099	25
	Staples (60mm) Staples (40mm)	Plastic staples used for fixing UFH pipe directly to the insulation panels.	16mm	3071057 3034037	300 600
	Edge expansion foam (25 X 0.15m)	Typically installed around the perimeter of a room to allow for thermal expansion of the floor screed.		3071100	1
	Cold forming bend	Used to shape and support the UFH pipe from the horizontal plane to the vertical plane below the manifold.	16mm	3033959	1 per pack
	UFH pipe coils (70m – 500m)	Used for the distribution of the heated warm water to facilitate the heat transfer within the floor. For further product information refer to page 6.	16mm	Refer to page 6	1

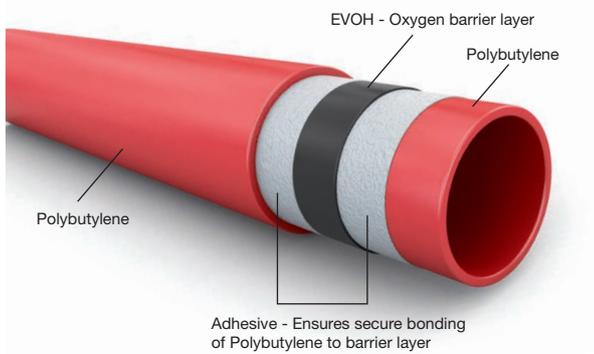
Underfloor Heating Pipe

Flexius Polybutylene (PB)

Flexius Polybutylene (PB) UFH pipe with integral oxygen barrier is manufactured to BS EN ISO 21003:2008.

Major Benefits:

- ⌚ Superior flexibility even at low temperatures for easy forming of bends at end returns and leading to the manifold.
- ⌚ High impact resistance – returns to the original shape if crushed.
- ⌚ No recoil in use.
- ⌚ 100-year guarantee for UFH applications.
- ⌚ Up to a maximum circuit loop 120m.



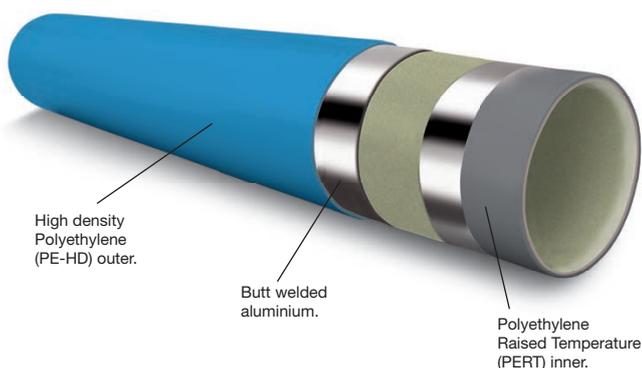
UFH pipe coil length (m)	Nom Dia.	Product Code	Pack Qty
70m	16mm	3038006	1
80m	16mm	3038007	1
90m	16mm	3038009	1
100m	16mm	3038010	1
110m	16mm	3038011	1
120m	16mm	3038012	1
200m	16mm	3038016	1
500m	16mm	3038024	1

Tigris: Multilayer Alu-PERT

Tigris multilayer diffusion resistant pipe, comprises PERT inner layer, butt welded aluminium middle layer and HDPE outer layer.

Major Benefits:

- ⌚ Bends easily and retains its shape.
- ⌚ Lightweight and resilient.
- ⌚ Up to a maximum circuit loop 100m.
- ⌚ Application radiator and UFH only.



UFH pipe coil length (m)	Nom Dia.	Product Code	Pack Qty
200m	16mm	3017595	1
500m	16mm	3017597	1

Manifolds

Underfloor Heating

A manifold is required whenever UFH is installed to serve two or more plumbed circuits from a primary heat source. When the UFH is connected to the high temperature heat source which also heats the hot water supply and/or radiators, a mixing unit is connected to the manifold to mix the water to the required temperature for the system.

The Wavin Underfloor heating system offers the option of:

Composite Manifold



Main Features:

Composite Manifold

- ⌚ Control Pack & Connection Brass
- ⌚ Manifold body is PA6.6 Polyamide Glass Filled
- ⌚ Manufacturer warranty 1 year
- ⌚ Flexible number of ports up to a max of 14
- ⌚ Easily Extendable
- ⌚ Isolate Circuits without balancing
- ⌚ Flexible primary connection (Left or right)
- ⌚ Flexible zone connection (above or below)
- ⌚ BBA Certification for a 25 year service life

Stainless-Steel Manifold



Main Features:

Stainless-Steel Manifold

- ⌚ Control Pack & Connection Brass
- ⌚ Manifold body is AISI 304 Stainless Steel
- ⌚ Manufacturer warranty 1 year
- ⌚ 2 to 12 port manifolds available
- ⌚ Extendable
- ⌚ Isolate Circuits without balancing

Manifolds

Composite Manifold

Components:

	Item	Description	Nom Dia	Product Code	Pack Qty
	Control pack	Thermostatically controlled mixing unit with circulating pump		3071175	1
	Starter pack	Pack includes brackets and fixings, flow temp gauge, return pressure and temp gauge, nylon gaskets, port end cap and the starting body of the manifold		3071176	1
	1 Port pack	Pack includes flow and return port for one circuit loop	16mm	3070722	1
	3 Port pack	Pack includes flow and return ports for three circuit loops	16mm	3070723	1
	Euroconus adaptor (16mm x 1.8mm)	Connection of UFH pipe to port packs	16mm	4060502	1
	Isolation valves 22mm	Fitted to the control pack or starter pack to isolate the manifold from the heating circuit	22mm	3071110	1

Manifolds

Stainless Steel Manifold

Components:

Item	Description	Nom Dia	Product Code	Pack Qty
	Flow and return : 2 port 3 port 4 port 5 port 6 port 7 port 8 port 9 port 10 port 11 port 12 port	16mm	4037291 4037292 4037293 4037293 4037295 4037306 4037307 4037308 4037309 4037310 4037311	1 1 1 1 1 1 1 1 1 1 1
	Female to Female coupling connection to mixing unit	16mm	4037316	2
	Ball Valves Stainless 1" (pair)	16mm	3033596	1
	Thermometer for Ball Valves		4037316	1
	Connection of UFH pipe to port	16mm	4060502	2
	Connection for Actuator to stainless steel manifold port	16mm	3070110	12
	Auto air vent with non-return	16mm	4037317	1
	Instrument to measure the fluid temperature		4037318	1
	Pack includes flow and return port for one circuit loop	16mm	4037315	1

Controls

24V Wired or Wireless

This system is available with the options of:

- ④ 16 zone wired Control centre with wired programmable thermostats.
- ④ 16 zone wired Control centre with wireless programmable thermostats.

	Description	Product Code	Pack Qty
	16 Zone control centre	3071174	1
	Flow watch thermostat	3071111	1
	Options: 24V Wired programmable thermostat 24V Wireless programmable thermostat	3071169 3071171	1 1
	24v Flow watch sensor probe	3071109	1
	Remote sensor probe cover	3071108	1
	24V Actuator	3071113	1

Controls

230V Wired Network Control

Control centrally either by the touchpad or via any remote device e.g. phone, tablet, PC.

	Description	Product Code	Pack Qty
	NeoHub (up to 32 zones)	3066729	1
	230V 8 zone wired control centre	3080970	1
	Flow watch thermostat	3071111	1
	230V NeoStat White	3071105	1
	Wireless Air Temperature Sensor	4067607	1
	24V/230V remote sensor probe	3071109	1
	Remote sensor probe cover	3071108	1
	230V Actuator	3071112	1

Controls

230V Wireless Network Control

Control centrally either by the touchpad or via any remote device e.g. phone, tablet, PC.

	Description	Product Code	Pack Qty
	NeoHub (up to 32 zones)	3066729	1
	230V 8 zone wireless control centre	4067610	1
	Flow watch thermostat	3071111	1
	White NeoAir wireless stat	4067608	1
	Wireless Air Temperature Sensor	4067607	1
	24V/230V remote sensor probe	3071109	1
	Remote sensor probe cover	3071108	1
	230V Actuator	3071112	1

Guidance

Underfloor Heating

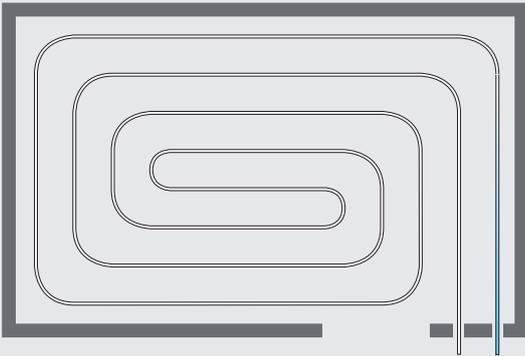
General installation Advice:

Typical pipe spacing can range from 150mm to 200mm centres depending on the heat source, floor construction and room size.

Typical Pipe Layout Patterns:

There are two typical patterns for laying UFH pipe:

Spiral:



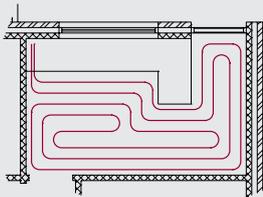
Initially at 400mm centres this layout follows the room shape in a spiral to the middle and is then reversed out from the middle. This leaves pipe spacing at 200mm centres. This pattern is possible with two Wavin underfloor heating systems – Staples and System Plates. With spiral patterns, close centres can generally be achieved without excessively tight turns.

Serpentine:

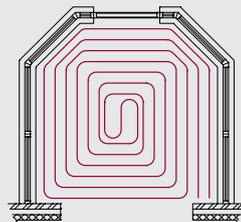


Pipe is laid in parallel runs up and down the room length, with loop turns each end. Wavin system plates use the serpentine pattern and it can also be used with staples.

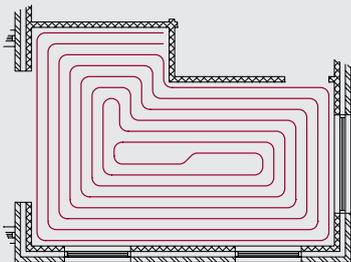
Some Typical Room Layouts:



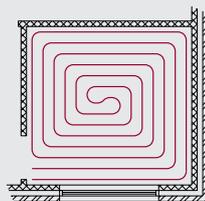
Regular Shape



Conservatory

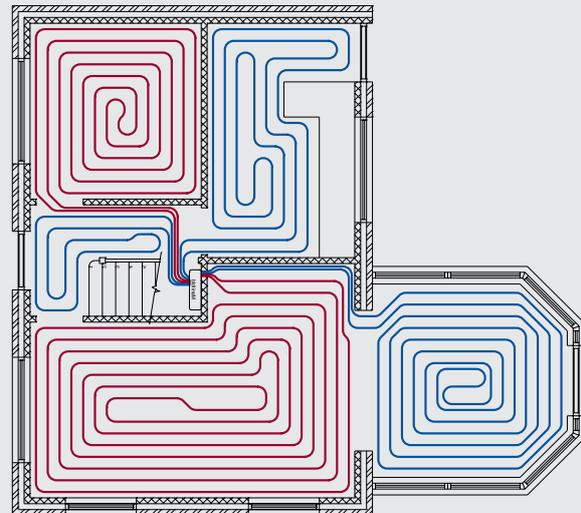


L-Shaped



Basic Square

Typical multi-room layout – Spiral



Typical Heat Outputs

Underfloor Heating

The heat output is the result of a combination of factors including the UFH system installed, the floor finish installed over it, the UFH pipe spacing and the designed flow/return temperatures. Below is a guide to typical heat outputs based on different pipe centres and floor coverings.

Heat Source Efficiency		No Covering	10mm Tiles	25mm Stone	4mm Vinyl	7mm Laminate	6mm Carpet	18mm Timber	12mm Carpet	12mm Carpet + 4mm underlay
Wavin UFH System	Pipe Centres	TOG value of typical floor finish								
		0.00	0.07	0.15	0.16	0.44	0.75	1.13	1.50	2.00
Staples inc 65mm screed	100mm	6.05	5.77	5.48	5.45	4.64	4.00	3.42	3.01	2.58
	150mm	5.17	4.95	4.73	4.70	4.07	3.55	3.08	2.73	2.38
	200mm	4.46	4.28	4.10	4.08	3.58	3.16	2.78	2.49	2.19
	300mm	3.35	3.24	3.13	3.12	2.80	2.53	2.27	2.08	1.86
System Plates inc 65mm screed	150mm	5.07	4.86	4.64	4.61	4.00	3.50	3.05	2.71	2.36
	225mm	4.06	3.91	3.76	3.74	3.31	2.95	2.61	2.35	2.08
	300mm	3.28	3.18	3.07	3.06	2.76	2.50	2.25	2.06	1.84

* Where pipes are connected from above, access panels will typically reduce the heated floor area by 17%.

Standards and Warranties

Product and System Warranties:

Provided that their installation has adhered to our published advice, Wavin products used within Wavin underfloor heating systems are covered as follows:

- ④ Wavin Flexius Polybutylene (PB) UFH barrier pipe when used in UFH applications: 100-year guarantee*; BSI Kitemark.
- ④ Composite manifold: 25-year BBA certification; 1-year warranty for its electrical components.
- ④ Stainless-Steel Manifold: 2-year manufacturer warranty.
- ④ Controls: 2-year warranty.
- ④ Other Wavin underfloor heating items: 1-year warranty.

*See pipe service conditions on website.

Quality and Environmental Management:

All Wavin products are manufactured under exacting quality and environmental management systems:

- ④ BS EN ISO 9001:2008.
- ④ EN ISO 14001:2004 Certificate No.1473.

Discover our broad portfolio at www.wavin.ie

Water management

Plumbing and heating

Waste water drainage

Water and gas distribution

Cable ducting



Wavin is part of Orbia, a community of companies working together to tackle some of the world's most complex challenges. We are bound by a common purpose: To Advance Life Around the World.



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