

Ridgeline

Underfloor

Ridgeline Underfloor – Data Sheet

Description

Ridgeline™ Underfloor tube is a corrugated stainless steel tubing system for underfloor heating. It consists of:

- A first layer of close pitch corrugated marine grade 316L stainless steel. Each corrugation is designed for the closest possible pitch (distance between corrugations) and with a high variation between the outer and inner diameter. This is to maximise the surface area contact with the hot water inside the tube.
- A second layer of 100% recycled polyethylene (PE). The PE layer is designed to be a max 0.3mm thickness (to minimise resistance to heat flow). The PE layer is to protect the stainless steel from any building materials that might contain chlorides.

Using Ridgeline Underfloor will nearly double the surface area contact between the inner tube wall and the hot water flow inside the tube (vs, PEX tube). This will increase the Kh value of the finished floor, which in a properly designed underfloor heating system can result in lower mean water temperatures and/or more responsive heating. Please consult the Ridgeline Technical Guide for more information.



Types of Ridgeline Underfloor tube

There are 3 sizes of Ridgeline Underfloor tube. All 3 sizes (due to their geometry) will have a similar effect on the Kh value of the floor when installed at the same pipe centres. The main difference between the tube sizes are with regards to pressure drop.

- Pro-FAST 15 - has an outer diameter of 15mm and will fit any overlay board (i.e. from any other manufacturer). It has a similar pressure drop to 12mm PEX.
- Pro-FAST 17 - has an outer diameter of 17mm and has a pressure drop similar to 15mm PEX
- Eco-MAX - has an outer diameter of 22mm and has minimal pressure drop.

The main advantage of using of using larger diameter tube is that longer run circuits are possible. Longer circuits permit larger floor areas to be covered on the same circuit and/or allow close or very close pipe centres to be utilised, which can further increase the Kh value of your floor.

Dimensions of Ridgeline Underfloor tube

	Pro-FAST 15	Pro-FAST 17	Eco-MAX
OD	15.0 mm	17.2 mm	22.4 mm
ID	10.0 mm	12.2 mm	16.6 mm

Lengths and weight of Ridgeline Underfloor tube

Ridgeline Underfloor tube comes in lengths of 100m, 200m or 500m lengths. 500m lengths are suggested, as then these can be cut down on site reducing wastage. However, attention should be paid to the weight of 500m coils, especially if being installed on upper floors.

Once the 500m spools are placed onto a spool roller, they are easy to de-spool. Spooler roller kits are available for all 500m coils.

	Pro-FAST 15	Pro-FAST 17	Eco-MAX
100m	12 kg	17 kg	24 kg
200m	24 kg	34 kg	48 kg
500m	67 kg	95 kg	110 kg

Use of de-spoolers

Using a de-spooler for all Ridgeline Underfloor tubing is highly recommended. Ridgeline Underfloor tube is highly flexible and easy to lay, but it also means that it can get tangled more easily than PEX when not using a de-spooler.

Ridgeline specific de-spoolers are available for 500m coils. 100m / 200m coils are compatible with all PEX de-spoolers (but also available from Ridgeline).

Materials

The corrugated tubing layer is made from 1.4404 (316L) stainless-steel conforming to BS/EN 10088. Our stainless steel contains a minimum of 80% recycled content. Outer protective layer is made from 100% recycled polyethylene.

Floor installation methods:

Pro-Fast 15 is compatible with all floor installation methods designed for PEX tube. Pro-FAST 17 and Eco-MAX have outer diameters that may make them incompatible with some floor installation methods, however Pro-FAST 17 and Eco-MAX specific overlay boards are available.

	Pro-FAST 15	Pro-FAST 17	Eco-MAX
Clip down (screed)	✓	✓	✓
Castellated panels	✓	✓	-
Standard overlay boards for 15/16mm PEX	✓	-	-
Overlay boards specific to Pro-FAST 17 or Eco MAX	-	✓	✓

Connection to the manifold

All Ridgeline Underfloor tube connects directly to any standard 3/4" inch manifold port.

For Pro-FAST and Eco-MAX products, connector core sets are available which allow connection of Ridgeline Underfloor tube to the manifold port.

Pro-FAST can be connected to any manifold set using a PEX connector core (if the manifold is already provided with connector cores in place) by using a Pro-FAST adapter. Remove the inside of the PEX connector core, and replace with the Pro-FAST adapter.

Clean circular cuts of the tubing shall be made to ensure reliable sealing of the tubing. Any sharp protrusions of stainless steel should be removed before attaching the adapter.

Pressure Testing & Corrosion Protection:

All underfloor heating systems should be pressure tested before being placed into commission. Do not exceed 5 bar pressure when pressure testing, as this can elongate the corrugations in the tube (the tubes burst pressure is significantly higher than this).

Damage to Outer Sleeve Layer

In a screed floor - any damage to the outer sleeve layer, to the point of causing a hole in the cover, should be repaired using self-amalgamating silicone tape available from Ridgeline.

In an engineered or chipboard floor - any damage to the any damage to the outer sleeve layer, to the point of causing a hole in the cover, is at the discretion of the installer. If its in a location where its possible that it may come into contact with a building material that contains chlorides (for example plaster) then it should be repaired using self-amalgamating silicone tape available from Ridgeline.

Damage to corrugated tube

As in all underfloor tube systems, if the tube becomes damaged or has a hole in it, the entire circuit should be removed and replaced.

Relevant standards and best practice

Installers should be familiar with the CIBSE Underfloor Heating Design & Installation Guide and install all underfloor heating systems in accordance with BS / EN 1264.

Pressure drop

Pressure drop in Ridgeline Underfloor tube is higher than PEX tube of the same outer diameter. Pressure drop tables can be found in Annex A of the Ridgeline Underfloor Technical Guide.

Thermal conductivity and Kh values

One of the main advantages of Ridgeline Underfloor tube is that the significant reduction in resistance to heat flow from the hot water to the floor surface can significantly increase the thermal conductivity (Kh value) of the completed floor.

Besides the tubing used, there are number of other choices an installer can make that can change the total thermal conductivity of the completed floor. For example, screed type (high conductivity vs. low conductivity), screed thickness, floor surface covering, pipe centres etc.

Heat output tables for a 45mm standard screed system are given in Annex 2 of the Ridgeline Underfloor Technical guide, as well as Kh values for screed and aluminium spreaders in Annex 1 and 3.

We also have tools available to help estimate the correct Kh value calculation for floors where different materials or variables are changed from to the standard installations shown in pages 28-34 of the CIBSE guide.

Flexibility, pipe spacing and Kh values

Ridgeline Underfloor placed at the same pipe centres as PEX tube will increase the thermal conductivity of the finished floor. However, due to the rapid install time and flexibility of Ridgeline Underfloor tube, close, or very close pipe centres are possible.

Closer pipe centres can increase the thermal conductivity of the floor even further, which in a properly designed heating system can allow further lowering of the mean water temp (i.e. the outlet temp of the heat source) and/or increase the heating responsiveness of the underfloor heating system.

Design Services /Training

We have a range of tools available to help you design your Underfloor heating system. We also have access to underfloor heating design software that includes all Ridgeline Underfloor tubing sizes.

This information sheet must be read in conjunction with the Ridgeline Underfloor Technical Guide.