

TECHNICAL DATA SHEET

Pre-Insulated Ridgeline™ + P1™

COMING SOON · ENTERING PRODUCTION · JULY 2026

Status: coming soon. Entering production in R-28, R-32-HP and R-35. Register your interest at ridgelinetubes.com.

Ridgeline™ is a premium corrugated stainless steel piping system engineered for all plumbing applications, including hot and cold water plumbing, central heating systems and the feed-and-return pipework of air source heat pumps and solar thermal panels.



316L

Marine-grade stainless steel core

0.034

W/(m·K) insulation thermal conductivity

15 bar

Working pressure · certified to 99 °C for potable water

SYSTEM DESCRIPTION

Because Ridgeline performs so well on heat pump and solar thermal work, we have developed a pre-insulated version across the key pipe diameters typically used in ASHP and solar thermal installations. The pre-insulated system pairs a corrugated stainless steel core and a factory-bonded insulation layer with the P1™ mechanical fitting connection system.

PIPING CONSTRUCTION

- **Primary layer:** marine-grade 316L stainless steel with engineered corrugations that provide maximum flexibility while delivering superior crush and burst performance.
- **Insulative layer:** closed-cell nitrile foamed rubber, finished with a durable, waterproof and UV-stable PE outer shell that makes it suitable for outdoor use.

P1™ FITTING CONNECTION SYSTEM

- Robust metal-on-metal seal with a secondary elastomer backup, available in a large range of fittings across the pre-insulated sizes (R-28, R-32-HP and R-35).
- Universal-thread interfaces for copper, plastic and brass system integration.

AVAILABLE SIZES & INSULATION OPTIONS

The pre-insulated version of Ridgeline comes in **R-28**, **R-32-HP** and **R-35** only: the key tube diameters used in outdoor ASHP and solar thermal pipework. Pre-insulated Ridgeline is simply there to make installation easier: every size of uninsulated Ridgeline can still be used for ASHP and solar thermal work, and you are not obliged to use the pre-insulated version at all. You can specify standard Ridgeline and choose your preferred insulation type or manufacturer, exactly as you would with copper.

DIMENSIONS OF PRE-INSULATED RIDGELINE TUBE

	R-28	R-32-HP	R-35
Outer diameter (with insulation)	48 mm	52 mm	60 mm
Polyethylene cover thickness	0.80 mm	0.80 mm	0.80 mm
Inner diameter	23 mm	27 mm	33 mm
Tubing wall thickness	0.25 mm	0.25 mm	0.30 mm

MATERIALS

- Corrugated tubing: 1.4404 (316L) stainless steel conforming to BS EN 10088.
- Insulation layer: closed-cell nitrile foamed rubber (NBR), finished with a protective PE outer layer.
- UV-stable and waterproof outer shell.
- Fire rating of insulation layer: Class 1 surface spread of flame (BS 476 Part 7); UL94 V-0, self-extinguishing.
- Thermal conductivity: 0.034 W/(m·K).

WORKING PARAMETERS

CERTIFIED SCOPE: UK POTABLE WATER

- Maximum working pressure 15 bar; maximum operating temperature 99 °C; 85 °C continuous for hygienic use.
- Certified under Kiwa Reg 4 (certificate 2604733) and WRAS Approved, across the full tube range R-15 to R-54.
- UK Water Regulations do not permit storing water above 100 °C, so potable-water certification does not extend above it.

MECHANICAL CAPABILITY: NON-POTABLE APPLICATIONS

- Working pressure 15 bar at 20 °C.
- The factory nitrile-foam insulation is rated to a maximum service temperature of 125 °C, which comfortably covers all air-source heat-pump and solar-thermal flow-and-return duties.
- For higher-temperature circuits, specify standard (uninsulated) Ridgeline lagged with a suitable high-temperature insulation; the 316L tube and P1 fittings are themselves rated to 150–180 °C.
- Suitable for indoor and outdoor use. Can be buried in screed; for direct ground burial follow the Ridgeline installation guidance.

LENGTHS, WEIGHT & HANDLING

- Pre-insulated Ridgeline is supplied in coils of up to 100 m and can be cut to length on site to reduce waste.
- Shorter lengths are also available in 15 m and 25 m boxes.
- Reduced weight per metre versus copper reduces handling effort and the risk of theft on site.

INSULATION & LAGGING

- All ASHP and solar thermal installations should be lagged before commissioning.
- Insulation type and thickness should be tailored to the specific installation for optimal performance.
- Pre-insulated Ridgeline has been specified to suit the majority of installs; more specialised installations may require a different insulation type, in which case standard Ridgeline can be used and lagged conventionally on site.
- Pre-insulated Ridgeline insulation: closed-cell nitrile foamed rubber; thermal conductivity 0.034 W/(m·K); maximum service temperature 125 °C.

INSTALLATION PARAMETERS

BEND RADIUS

- Corrugated design enables exceptional flexibility without kinking.
- Bend radius equals the diameter of the tube; adjacent (back-to-back) bends can be achieved where required.
- Full kink resistance is maintained even at extremely tight bends.
- No special tools needed for bending.
- 90° bends are possible in place of elbow fittings.

SUGGESTED PIPE CENTRES

Pipe supports and clips should be installed at the suggested pipe centres below.

TUBE	R-28	R-32-HP	R-35
Suggested pipe centres	1.2 m	1.8 m	1.8 m

REQUIRED TOOLS

- Metal wheel pipe cutter.
- Utility knife (for removing the protective cover).
- Spanner / wrench (for tightening P1 fittings).

CONNECTION ASSEMBLY

- Tighten with two spanners until resistance increases significantly. The corrugated tube self-flares against the brass seat to create the primary seal, while the O-ring abuts the collapsed tube to form a secondary seal.

P1™ FITTINGS

P1 mechanical fittings create a metal-on-metal seal with secondary elastomer backup, and are available for all pre-insulated Ridgeline tube sizes in a wide range of fitting options.

P1 FITTINGS RANGE	R-28	R-32-HP	R-35
Male BSP	✓	✓	✓
Female BSP	✓	✓	✓
Female Elbow BSP	✓	✓	✓
Copper Union	✓	✓	✓
Copper Elbow	✓	✓	✓
Tee	✓	✓	✓
Reducing Tee	✓	✓	✓
P1 to RidgeLock	✓		

PERFORMANCE PARAMETERS

CORROSION RESISTANCE

- Superior corrosion resistance compared with copper tube in UK drinking water conditions (verified through independent testing at Lancaster University).
- Engineered for domestic water systems.
- All installations must be pressure tested to the relevant standards before commissioning.
- Suitable for use with glycol and inhibitors. Compatibility with stainless steel should be checked, although most brands of glycol and inhibitor are compatible.

FREEZE PROTECTION

- Corrugated design provides superior resistance to single freeze events compared with rigid tube.
- Corrugations can accommodate expanding ice.
- Protection against freezing should always be the primary approach.
- Long continuous runs without fittings are recommended in freeze-risk areas.
- Repeated freeze/thaw cycles may cause permanent deformation.

INTERRELATION WITH OTHER SYSTEMS

- **Copper integration:** a wide range of P1™ copper unions, elbows and tees is available.
- **Plastic system connection:** connect via a male / female BSP thread combination.
- **RidgeLock compatibility:** a P1-to-RidgeLock adapter is available for R-28.

WRAS & KIWA REG 4

Ridgeline™ tube and P1™ fittings are WRAS Approved and certified under Kiwa Reg 4 (KUKreg4 ATS 3), certificate **2604733** (issued June 2026, valid to 2031). Certified scope: full tube range R-15 to R-54, maximum working pressure 15 bar, maximum operating temperature 99 °C, 85 °C continuous for hygienic use.



DAMAGE & REPAIR

DAMAGE TO CORRUGATED TUBE

- If the tube becomes damaged it can be repaired using a P1 union fitting.

DAMAGE TO OUTER SLEEVE LAYER

- Any damage that creates a hole in the protective cover must be repaired in locations where the tube may contact building materials containing chlorides (screed, plaster, cement).
- Use self-amalgamating silicone tape, available from Ridgeline.

SPECIALIST VARIANTS

The Ridgeline plumbing system (pipe, RidgeLock™ and P1™ fittings) is designed for a wide range of plumbing applications. We also offer specialist variants: **Ridgeline Underfloor**, engineered specifically for underfloor heating systems, and **Ridgeline Flexis**, flexible connectors that replace braided rubber flexis.

These specialist variants are not directly compatible with regular Ridgeline pipe or RidgeLock™ and P1™ fittings. Please contact us for more information.

PRESSURE DROP

Pressure drop (Pascals) and velocity (m/s) per metre of tube run, for a range of flow rates and tube diameters.

FLOW		R-28		R-32-HP		R-35	
L/MIN	L/S	M/S	PA	M/S	PA	M/S	PA
2.50	0.0417	0.10	15	0.07	7	0.05	2
5.00	0.0833	0.20	58	0.15	25	0.10	9
7.50	0.1250	0.30	128	0.22	54	0.15	19
10.00	0.1667	0.40	225	0.29	95	0.19	33
12.50	0.2083	0.50	349	0.36	147	0.24	51
15.00	0.2500	0.60	500	0.44	211	0.29	73
17.50	0.2917	0.70	679	0.51	286	0.34	98
20.00	0.3333	0.80	885	0.58	373	0.39	128
22.50	0.3750	0.90	1,118	0.65	471	0.44	161
25.00	0.4167	1.00	1,378	0.73	580	0.49	199
27.50	0.4583	1.10	1,666	0.80	701	0.54	240
30.00	0.5000	1.20	1,981	0.87	833	0.58	285
50.00	0.8333			1.46	2,301	0.97	783
100.00	1.6667					1.95	3,106
150.00	2.5000					2.92	6,969



Brochures, certifications & technical documents

Scan the QR code to access the full Ridgeline document library, or visit www.ridgelinetubes.com · 01625 70 71 72.