Ridgeline

TECHNICAL RESOURCE

DRINKING WATER PIPEWORK

Drinking Water Pipe Material Comparison.

Copper, PEX, multilayer composite, push-fit plastic and 316L stainless steel, compared for drinking-water pipework specifically.

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THE BRIEF

Specify by water-contact surface, not just material name.

The right comparison for a drinking-water system is not "which pipe is cheapest per metre." It is which installed system gives the strongest material story for the water path, the fewest concealed fittings, and the clearest evidence pack from approval through to installation.

Once compliance is established, four practical questions usually decide the specification. What material is actually in contact with the drinking water? How many joints sit hidden in inaccessible spaces? How does the material behave with hot and cold water and the local water chemistry? And what happens if a joint behind a finished wall later fails?

Ridgeline is corrugated 316L stainless steel tube for whole-home water distribution. Approved plastic systems are widely used and can be compliant. Where a brief calls for no plastic tube in the drinking-water path, Ridgeline gives the metal alternative.

316L stainless water-contact tube	**No plastic in the drinking-water path**	**WRAS approved**	**Kiwa Reg 4 certified**	**UK designed**

316L stainless steel tube with a brass RidgeLock fitting. The water-contact surface is metal end-to-end.

MATERIAL COMPARISON

Five materials, compared for drinking-water pipework.

Strengths, watch-outs, water-contact surface and best-fit scenarios. Approved plastic and composite systems are widely used and can be compliant; the table is written to help specifiers choose by water-contact surface and route logic, not by perception alone.

MATERIAL	WATER-CONTACT SURFACE	STRENGTHS	WATCH-OUTS	BEST-FIT SCENARIO
Copper	COPPER	Familiar metal water path. Widely stocked, established trade knowledge.	Can be affected by water chemistry. More joints on complex routes. Slower where many elbows are needed.	Traditional domestic plumbing, visible routes, repairs.
PEX	PLASTIC POLYMER	Flexible, fast, affordable, widely used in domestic work.	Plastic water-contact surface. Higher thermal expansion. System quality depends on fittings and installation.	Cost-sensitive domestic installs where plastic pipe is accepted.
MLCP	PLASTIC INNER / AL COMPOSITE	Flexible, lower expansion than plain PEX, neat with press systems.	Proprietary system dependency. Plastic water-contact surface. Fittings and tools matter.	New-builds using a defined press-fit specification.
Push-fit plastic	PLASTIC POLYMER	Very fast, simple, accessible for repairs.	Bulky fittings, perception concerns, fitting confidence varies by use case.	Quick repairs and simple domestic routes.
316L stainless	316L STAINLESS	**Premium all-metal tube water path. Corrosion resistance. Long continuous runs. Fewer hidden fittings. Recyclable metal material.**	**Premium product. Requires correct Ridgeline specification and fittings.**	**Whole-home potable water systems, concealed pipework, plastic-free water-path briefs.**

Always specify against the approved system and the project's water-contact preference. The four useful comparison questions: water-contact material, fitting count, hidden-joint risk, behaviour at hot-water temperatures.

COMPLIANCE COMES FIRST

Any pipe, fitting or material in a drinking-water system must comply with the Water Supply (Water Fittings) Regulations. The right question is not "is this material family always good or bad?" It is "is this specific system approved, sized and installed correctly?"

WHY IT MATTERS

The pipe material that matters most is the one touching the water.

In Ridgeline tube, the drinking water flows through 316L stainless steel. The outer protective sleeve is outside the tube and is not the water-contact surface. That distinction matters because buyers now ask sharper questions about the internal water path, particularly where the pipework will be concealed for decades behind finished walls and floors.

- Is the pipe approved for drinking-water use, with current documentation?
- Is the internal water path plastic or metal?
- How does the material behave at elevated domestic hot-water temperatures?
- What is the long-term material story over the building's life?
- What is the installed system's fitting count and route complexity?

Ridgeline R-22 tube with a P1 fitting. The printed marks (**Ridgeline · R22 · WRAS · Kiwa**) are the page's literal proof. WRAS approved, Kiwa Regulation 4 certified.

PLASTIC AND METAL

Plastic, microplastics and the drinking-water path.

Approved plastic pipe systems are widely used and can be compliant. Many domestic projects specify them correctly with no issue. Ridgeline is not an argument against plastic. It is a premium alternative for projects that want a metal water path, with no plastic tube material in contact with the drinking water.

> **"In Ridgeline tube, the drinking water is in contact with 316L stainless steel, not plastic."**

What plastic pipe does well

Plastic pipe systems became popular for good reasons. They are lightweight, flexible, fast to install, easy to handle and often the lowest-cost option per metre. PEX, PB, push-fit and multilayer composite systems all have legitimate roles in domestic plumbing where approved and correctly specified.

Why some buyers prefer metal

The concern is rarely a single approved system passing a test. It is material philosophy: what touches drinking water for the lifetime of the building, how the pipe ages, taste and odour over time, and the future perception of plastic in contact with potable water. Those are reasonable questions for a premium brief.

Microplastics and other migration from plastic pipe.

Research is evolving. It is possible that plastic plumbing materials can shed microplastics into potable water in some conditions, particularly at higher temperatures and over long service lives. Other studies have examined the migration of volatile organic compounds, plasticisers and antioxidant breakdown products from plastic pipework, especially when newly installed or at elevated temperatures. Approved systems are tested under BS 6920 and equivalent standards to control these effects, and the science is not settled. Ridgeline does not claim plastic pipe is unsafe. For projects that want a metal water path on precautionary grounds, the simple answer is a 316L stainless steel tube.

BY SCENARIO

The best choice depends on the brief.

There is no single "best" drinking-water pipe across every project. Match the brief to the material that fits it. Where a brief includes "premium, whole-home, concealed pipework with fewer hidden joints," 316L stainless steel is a strong choice.

Basic repair where familiarity matters	**Copper or approved plastic system**
Lowest upfront material price	**Approved plastic pipe**
Defined press-fit new-build specification	**MLCP or approved press system**
Visible traditional pipework	**Copper**
Premium whole-home water distribution	**316L stainless steel**
Fewer hidden fittings behind walls	**Flexible 316L stainless steel**
No plastic tube in drinking-water path	**316L stainless steel**
Heat pump-ready pipework strategy	**Ridgeline flexible stainless steel system**

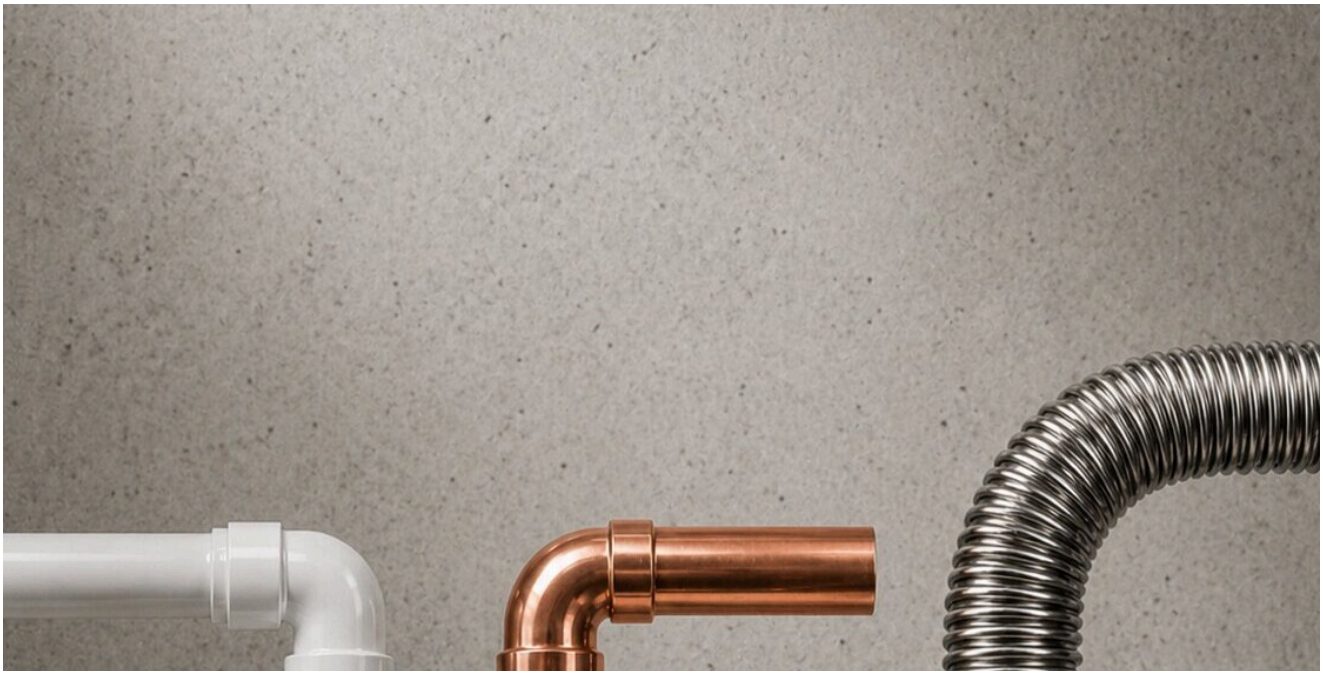
Ridgeline tube connects to standard EN 1254 brass tees and standard valves. A stainless steel water path that still fits the rest of the trade.

HIDDEN FITTINGS

Every fitting behind the wall is a future access risk.

When people compare materials, they often focus on pipe composition. But installed plumbing failures concentrate at joints (elbows, tees, transitions, seals) and at how those joints are supported. For drinking-water pipework that is destined to be concealed behind plasterboard, under floors and inside service voids, the design rule is simple: reduce hidden fittings.

> **"The fitting you do not install behind the wall is the fitting that can never leak behind the wall."**



Plastic and copper rely on elbow joints at every direction change. Ridgeline bends in one continuous run. Fewer fittings, fewer potential leak points hidden in the wall.

Route, don't joint

Form direction changes in the tube itself through joists, voids and risers. Long continuous Ridgeline runs in place of elbow-by-elbow assembly.

Keep joints accessible

Where fittings are required, locate them in plant rooms, cupboards and service hatches. Places that can be inspected and serviced.

One ecosystem

Hot, cold, heat pump flow and return, underfloor and final connections. A single 316L stainless steel system for the whole home.

PROOF PACK

Documents, approvals and useful links.

Ridgeline corrugated 316L stainless steel tube with a brass mechanical fitting.

Specifier downloads and approvals.

→ **P1 Fittings, data sheet**	ridgelinetubes.com/…/Ridgeline-Plumbing-P1-Data-Sheet.pdf
→ **RidgeLock, data sheet**	ridgelinetubes.com/…/Ridgeline-Plumbing-Ridgelock-Data-Sheet.pdf
→ **Flexis, data sheet**	ridgelinetubes.com/…/Ridgeline-Flexis-Data-Sheet.pdf
→ **WRAS Product Approval Certificate**	ridgelinetubes.com/…/WRAS-PRODUCT-APPROVAL-CERTIFICATE.pdf
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