



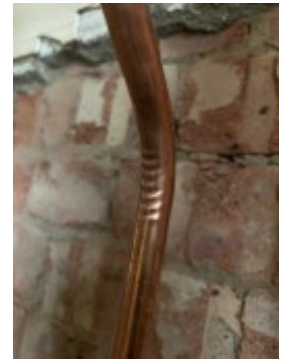
Copper Pipe Throating Issues

What is it?

Copper pipe "throat wrinkling" (also called rippling or rucking) occurs on the inside radius of a bend when formed on site and the metal compresses rather than flowing smoothly

Common Causes of Throating:

- Worn or Damaged Tooling – a worn guide or former that is no longer "square" or the correct distance apart can cause the pipe to ripple.
- Incorrect Pipe Type – Standard UK copper is typically 0.7mm "half-hard". Using a bender designed for thicker 1mm European pipe (like some older Bahco models) on 0.7mm pipe frequently causes rippling.
- Poor Snugness – if the pipe is not properly seated and "snug" against the former before you start pulling, it can deform.
- Stop-Start Motion – bending should be one continuous, smooth movement. Halting and restarting mid-bend creates uneven pressure points.
- Lubrication – lack of lubrication on the guide or former can increase friction and cause the pipe to "drag" and ripple.



Why it's a problem

While minor throat wrinkling is often seen as a cosmetic flaw, it can lead to several long-term functional and structural problems within a plumbing system.

- Erosion Corrosion and Premature Leaks – wrinkles create turbulence that erodes the copper's protective internal film. Over time, this thinning can cause pinhole leaks or pipe splits.
- Structural Weakening (Stress Risers) – wrinkled bends concentrate stress and leave the metal work-hardened and brittle. These areas are more vulnerable to cracking or bursting during pressure surges or vibration.
- Biofilm and Bacteria Growth – wrinkle valleys form stagnant pockets that can shelter bacteria such as Legionella. Trapped organic material encourages biofilm growth and can reduce water quality.
- Flow Restriction and Pressure Loss – wrinkles increase friction and turbulence, causing minor head losses. Multiple poor bends can reduce flow and pressure, forcing pumps to work harder and use more energy.

Practical Solutions

- Ensure that the pipe bending equipment and tooling is not worn or damaged – inspect for loose roller bolts or damaged nylon guides. Some users use an old hacksaw blade as a shim to tighten the fit on older benders.
- Use a Pipe Bending Spring – insert an internal or external bending spring to distribute the pressure evenly across the throat and prevent it from collapsing inward.

Do not attempt to re-shape or repair throated pipe – the only safe solution is to cut out and replace with new.

This advice should be used, where the above is applicable, and the information discussed with your team highlighting the following points:

- Check and monitor installed pipework for issues
- Add to pipework install checklist as a formal inspection item
- Share with your M&E Supply Chain Partner

☐	Brickwork / Blockwork	☐	Design	☐	DFMA (Offsite Manufacture)	☐	Doors & Windows	☐	Drainage	☐	Electrical	☐	FFE (Furnishings, Fixing & Equipment)
☒	Fire & Lightening	☐	Floor Coverings	☐	Frames & Superstructure	☐	Internal Walls, Partitions & Ceilings	☐	Joinery & General Carpentry	☐	Miscellaneous	☐	Painting
☐	Public Health (Water)	☐	Roads, Paths, Paving & Surfacing	☐	Roof	☒	Services & Systems	☐	Site Preparation Works	☐	Substructure	☐	Walling (Tiling & Finished)

Document Number	Process Parent	Revision Status	Document Owner	Date	Page
Q FRM 05	Q STD 05	01	Quality Manager	May 2026	Page 1 of 1