Understanding UV CIPP Lining: Key Benefits and Applications for Pipelines

Pipeline networks are under increasing pressure as they age, and replacing them through excavation is often disruptive, expensive, and environmentally damaging. UV CIPP lining provides a trenchless alternative that strengthens existing pipelines, restores flow, and reduces installation time. By combining the reinforcement of glass fibre with the efficiency of ultraviolet curing, this approach delivers reliable rehabilitation while minimising impact on communities and the environment.

What is UV CIPP lining and why does it matter?

Ultraviolet (UV) CIPP is an advanced trenchless technology that lets us rehabilitate pipelines without full excavation. We use a glass fibre-reinforced liner that is impregnated with resin, pulled into place, then cured inside the host pipe using UV light. The result is a jointless, seamless “pipe-within-a-pipe” that restores structural strength, prevents leaks, and boosts flow.

When a lining system is correctly specified, installed, and cured, it delivers reliable performance and extends service life in aggressive environments. That's why UV CIPP matters: it combines structural reliability with less disruption, faster turnaround, and better hydraulic capacity.

How does iPlus® Glass UV work?

At Insituform, we developed iPlus® Glass UV to deliver both technical performance and environmental responsibility. The liner is reinforced with glass fibre, giving it superior mechanical strength while allowing thinner walls than standard CIPP. Because the tube is thinner, less resin is needed and hydraulic capacity is preserved.

Unlike traditional heat or steam curing, UV curing uses light to harden the resin, reducing energy consumption and shortening installation time. This means less downtime, fewer emissions, and a smaller site footprint. iPlus® Glass UV is designed for diameters from 150 mm to 1,200 mm, can handle soft bends up to 30°, and is suitable for host pipes of any material within a pH range of around 4 to 10.

What benefits do pipelines gain from using iPlus® Glass UV?

Choosing UV-cured glass-reinforced lining brings several technical benefits, especially when speaking of long-term performance:

- Better structural integrity: thanks to glass reinforcement, the lining handles external loads and internal pressure more effectively.
- Higher flow capacity: because the liner walls are thinner and inner surfaces smoother, loss of capacity compared to the original pipe is minimised.
- Faster project timelines: curing with UV reduces downtime. Installation is quieter and causes less disruption.
- Lower environmental impact: reduced resin use, less energy for curing, smaller jobsite footprint, less waste.

Where is iPlus® Glass UV best applied?

This solution is particularly effective in gravity pipelines where maintaining good flow is critical. It is also well suited to projects in urban or historic environments where excavation would cause significant disruption. Because of its reinforcement and temperature tolerance, iPlus® Glass UV is a strong choice for pipelines exposed to challenging conditions such as elevated effluent temperatures or aggressive wastewater.

What technical criteria do we use to ensure success?

Every successful installation relies on precision. We calculate structural requirements such as wall thickness, flexural strength, and modulus of elasticity according to international standards. Installation is carried out using the pull-in method, with close monitoring of curing to ensure complete hardening throughout the liner.

After curing, inspections such as CCTV are used to confirm that the installation meets design specifications, including leak tightness and flow capacity. This disciplined approach is what allows iPlus® Glass UV to deliver consistent, long-term results.

Why choose iPlus® Glass UV over standard CIPP?

Because we believe pipelines deserve better than just a patch. iPlus® Glass UV offers advantages standard CIPP lining often cannot match:

- Enhanced mechanical properties and longer useful life.
- Lower energy and material consumption.
- Fewer disruptions during installation.
- Reduced risk of common failure modes like thermal deformation, resin washout, or joint leaks.

That yields pipelines that perform more reliably, with fewer repeat interventions.

Want to see UV CIPP in your pipeline network?

If you’re looking for a UV CIPP lining solution that improves flow capacity, shortens downtime, and provides durable protection, we can help. Our team can assess your pipelines, recommend the right liner design and curing schedule, and work with you to deliver reliable rehabilitation.