

## Tipton, UK – Aged Network Rail Culvert service life extended.

The culvert known to Network Rail as RBS2/57A Tipton, over which run two non-electrified tracks, is a 68 m long brick built arch construction with a constantly flowing water course running through it. Over time, the culvert had suffered wear and tear and required maintenance before it was too late and would need to be replaced. Using trenchless technology to avoid any excavations and closing the track, Amiblu's NC Line – GRP structural liners were selected to renovate and restore the culvert, lengthening its lifetime without disruption to the nearby residents, or rail operations.

Amiblu NC Line is an off-site manufactured structural pipe relining system created specifically for trenchless installation and designed to withstand acidic and abrasive environments. As no two culverts are the same, Amiblu produced the NC pipes 2116 /1636 mm bespoke for this project in the company's state-of-the-art manufacturing facility in Gdansk, Poland.

Before installation works started, the team from contractor Eric Wright Group created a wooden template to replicate the NC Line units. The template was passed through the culvert to highlight areas that needed attention to ensure the installation of the 1.5 m long units could take place without obstruction. The condition of the culvert was classed as 'poor', preparation works included lowering the floor in places where high points and obstacles caused by heave to the invert and remediation of loose or displaced brickwork to the side walls and soffit.

Access and working space on site were very tight. Each NC unit was lowered into place with a compact excavator, then slid through the full extent of the tunnel along a steel bar track with the assistance of an electric winch and manual guidance by the installation team. The jointing system for this NC Line system is a spigot and socket joint with an elastomeric gasket seal, requiring no use of glue or sealants. Once all units were in place, the annulus was grouted and a specialist bricklayer from the local area was employed to complete the project, creating the external brickwork according to the original construction.



*NC Line installation commenced (note deformation to culvert)*



*NC Line Installation negotiating a slight radius*



*Wooden templates to ensure NC Line profile was manufactured to specification*

*Amiblu worked with us to ensure the units were manufactured to the specification and delivered to suit our site needs. All parties are very pleased with the result. – Jonathan Leek, Eric Wright Group, Contractor*

### PROJECT PARAMETERS

Country / City	United Kingdom
City	Tipton, West Midlands
Year of Construction	2019
Application	Sewer
Intallation	Relining
Technology	Amiblu
Total Length of Pipe	68m
Nominal Diameter DN (mm)	2m x 1.5m Bespoke
Client	Network Rail
Contractor	Eric Wrigh Group
Consulting Engineer	Network Rail

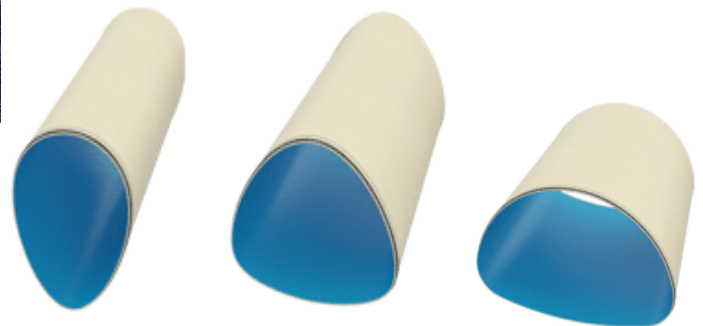


*Culvert open and operational*



*Nc Line Profiles ready for installation*

Now complete, the life of this Network Rail asset has been extended without disruption or track closures. Amiblu NC Line pipes are manufactured, tested, and approved according to ISO 16611, the relevant international pipe standard for non-circular pipes and in addition, the system has full traceability with each unit being individually identifiable.



*Example NC Line Profiles*

***"This was our first project of this nature for Network Rail, we have learnt a lot about the installation process of these liners and the capabilities of our own team. Amiblu worked with us to ensure the units were manufactured to the specification and delivered to suit our site needs. All parties are very pleased with the result."*** – Jonathan Leek, Eric Wright Group, Contractor

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