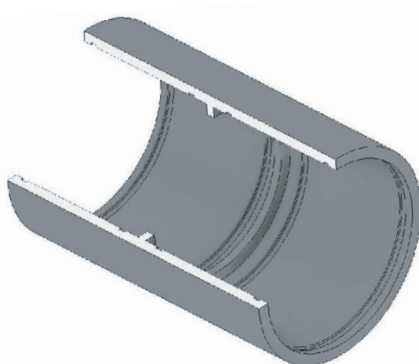
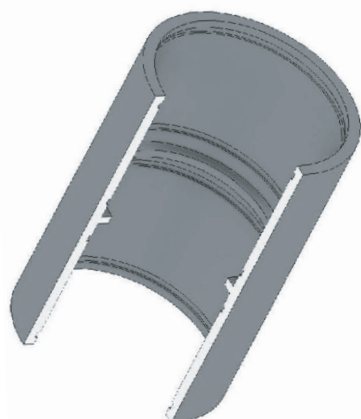


SCIGRIP Enables Fiberpipe to Develop a New Type of GFRP Pipe Bonding

Fiberpipe manufactures GFRP pipes for various industries, providing a complete service from planning to installation. In partnership with SCIGRIP, they developed an advanced solution for joining GFRP pipes by using our fatigue-resistant adhesive solutions.

Figure 1:

Technical drawing of Fiberpipe's patented socket, 2 angles



The Situation

- In 2018, Fiberpipe installed GFRP pipes in a power plant using the standard technique of sanding the surface and preparing it for over-lamination and bonding.
- This method ultimately proved unsatisfactory due to too much styrene evaporation, too much grinding dust, and an overall dirty installation process.
- Fiberpipe had already patented a new technique for bonding pipes in 2007, but it was not compatible with the conventional epoxy adhesives used at the time.
- They needed a new technique.

The Challenge

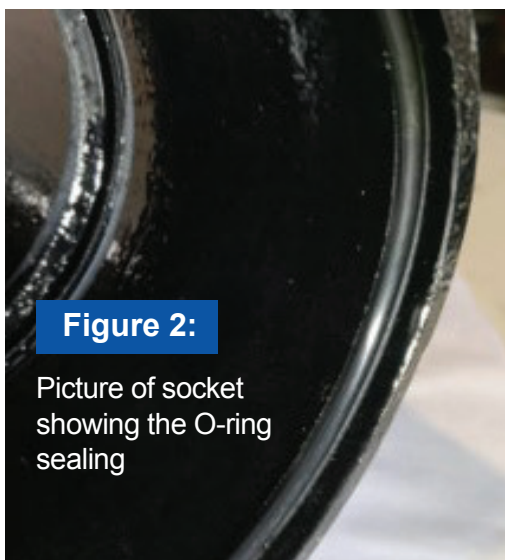
Bonding a Non-Sanded Surface

The new bonding technique was built around a special socket with four o-ring seals [fig. 1] that could center both GFRP pipes and set a defined bond line thickness (fig. 2). Through a small service hole, the adhesive could be applied into the cavitation between the GFRP pipe and the socket to create a reliable structural joint including an optimal sealing function (fig. 3). While the socket requires a smooth surface for installation, the standard epoxy adhesive only works on a sanded GFRP pipe – a tough challenge to master.

Twelve years later, when Fiberpipe entered into initial talks with one of our distributors, it was clear that they could provide exactly what was needed: specialized MMA adhesives, made by SCIGRIP.

Figure 2:

Picture of socket showing the O-ring sealing



More >>>

The Solution

SCIGRIP 5000 with No Surface Prep

Figure 3:

Picture of the service hole

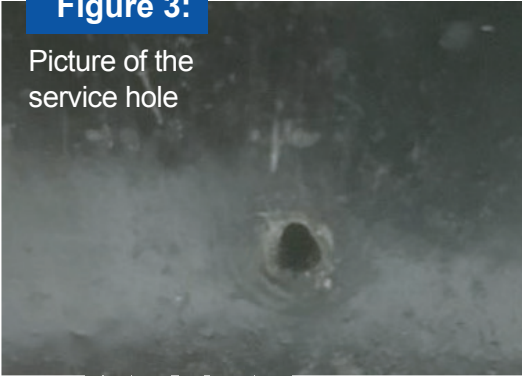


Figure 4:

The finished joint. Two GFRP pipes connected using Fiberpipe's innovative technique.



Figure 5:

Cross section of the cured joint. The visible o-ring sealings define the bond line thickness. Additionally, SG5000 created a homogeneous bond line around the GFRP pipe

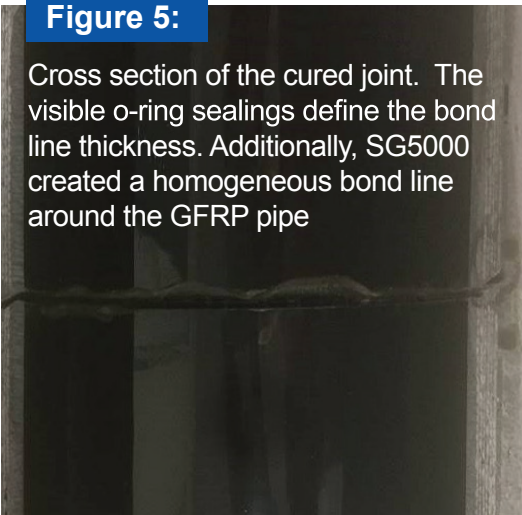


Figure 6:

Pressure test showed the joint is gastight up to 25 bar

