

CASE STUDY

Carbontech Case study 016
16" Pipe support Repair



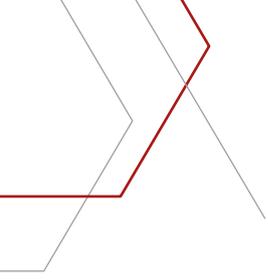


TABLE OF CONTENT

PAGE	CONTENT
1	Cover Page
2	Table of content
3	Project Details
4	Anomaly description Integrity concerns
5	The Carbontech Solution Conclusion
6	Contact Details

PROJECT DETAILS



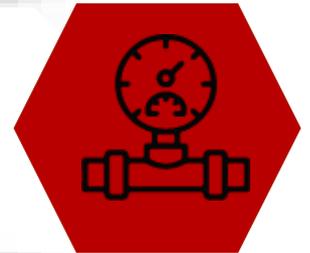
Case Study Number
CTCS:016

Design Pressure
30 Bar



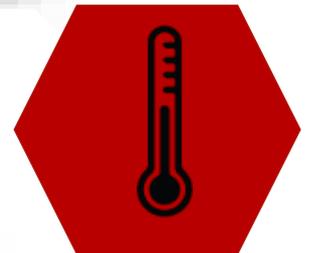
Repair Summary
16" Pipe support

Operating Pressure
17 Bar



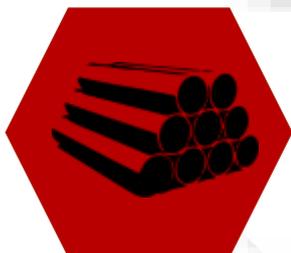
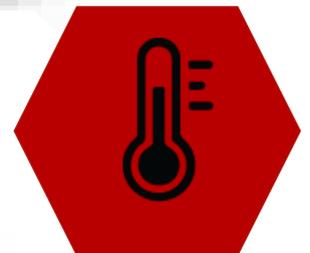
Client
South Africa Breweries

Design Temperature
185°C



Service Type
Steam

Operating Temperature
150°C



Line Size
16"

Base Material
SA-106 Gr-B



Line Class
300#



ANOMALY DESCRIPTION

Physical inspection revealed a pinhole on the 6 o'clock position next the pipe's support (see *Figure 1*). The pipe had also suffered from internal corrosion.

Figure 1:



INTEGRITY CONCERNS

Further operation of piping with severe internal corrosion with an existing pinhole poses the risk of collapsing the pipe therefore causing loss of its containment and possible injuries to nearby personnel



THE CARBONTECH SOLUTION

Using a bristle blaster, the pipe and support were cleaned to a bare metal finish (see **Figure 2** below). After cleaning, the surface profile was examined using testex tape to ensure the surface finish falls within acceptable standard. The pipe and support were then cleaned with acetone to remove any undesirable contaminants from the metal surface.

The pinhole was plugged with quick setting putty to completely stop the leak. Axial and circumferential strips were installed over the defect area including the support (see **Figure 3** below). Composite carbon fiber, engineered to ASME PCC-2 2018, was then applied over the defected area and the support to successfully complete the installation (see **Figure 4** below). 4 layers of composite wrap were installed on this repair and after 24 hours a full cure was achieved.

Surface Preparation achieved: SA2.5

Product used: Revowrap 85

Engineering calculations: ASME PCC2

Layers used: 4 layers

Post cured: Not Required - Line temperature provided sufficient heat to cure the wrap.

Figure 2: Axial strips Revowrap applied

Figure 3: Completed wrap



CONCLUSION

A successful repair was completed and the pipeline could run as per normal specifications until a planned turnaround where the piping can be replaced.



CARBONTECH

The place chemistry, engineering and global expertise are brought together to drive progressive innovation in advanced composite technologies for the emergency repair of critical assets "There is nothing generic about us" we don't just sell pipe wraps; we provide accurate engineering backing to deliver tailored solutions

Sound and responsible engineering is the basis on which we build our company, products and services. It is the core to our success and it is the foundation on which we have engineered and manufactured our innovative and bespoke products

We strive by a zero-failure philosophy and warrant our engineered composite solutions are tested, proven and validated. We vow to provide dependable, responsible and accurate information regarding the capabilities of our systems

www.revowrap.com

CONTACT DETAILS

Office: +27 (0) 10 446 6866

Email: info@revowrap.com

PHYSICAL ADDRESS:

Unit A5 • Growthpoint Industrial Estate • Bell Street • Meadowdale Germiston • 1614 • South Africa

PROGRESSIVE COMPOSITE ENGINEERING

