CASE STUDY

Carbontech Case study 027

3″ Complex Geometries Internally Corroded Methanol Line Repair

CARBONTECH
COMPOSITE SYSTEMS

TABLE OF CONTENT

PROJECT DETAILS

Case Study Number

CTCS:027

Design Pressure

3.5 Bar

Repair Summary

3" Elbow, Tee & straight

Operating Pressure

1.5 BAR

Client

Petrochemical plant Middle East

Design Temperature

99°C

Service Type

Methanol

Operating Temperature

80°C

Line Size

3"

Base Material

Carbon steel

Line Class

150#

ANOMALY DESCRIPTION

Due to severe internal corrosion, a 3" methanol line with various reducers, elbows, tees, and support structures, this has resulted in various pinholes leaks.

Fig 1: Primer being applied

Fig 2: complex geometry

Fig 3: Wrap in process

INTEGRITY CONCERNS

With continued and unmitigated corrosion, the pipe will further weaken resulting in more leaks and for the pipe to lose full structural integrity. This has the potential to cause major safety incidents, environmental hazards and loss of production with significant ramifications to plant production.

THE CARBONTECH SOLUTION

Without shutdown or loss to production, The and the pipe was cleaned to a ST3. All leaks and holes were stemmed prior to the application of the RW110 primer solution, prior to the application of the Revowrap RW110 carbon composite system.

Surface Preparation achieved: ST3
Product used: Revowrap 110
Engineering calculations: ISO 24817
Layers used: 4 layers
Post cured: Not Required - Ambient cure system

Fig 4: Completed wrap

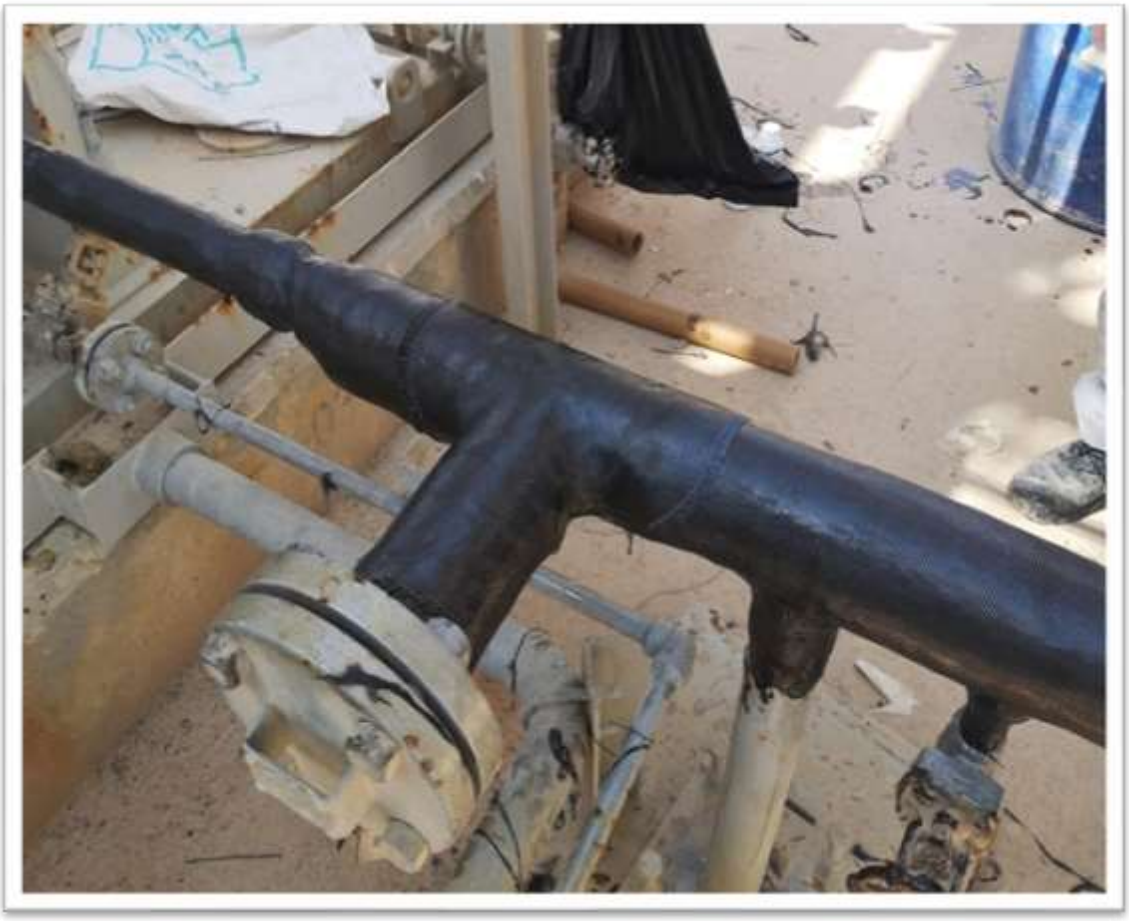

Fig 5: Completed wrap

CONCLUSION

The composite repair system designed by Carbontech satisfying the ISO TS 24817 standard was successfully installed. The corrosive nature of the process fluid and the length of the defect and configuration presented a challenge for the repair solution which was expertly addressed by Carbontech.

As a non-through-wall defect repair, the laminate wrap provides structural integrity to the pipe in accordance with the required design specifications that will withstand the internal corrosion for the remainder of the required 5-year design lifetime without the risk of losing production

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

PROGRESSIVE COMPOSITE ENGINEERING

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