

CASE STUDY

Carbontech Case study 001
"36" Elbow Composite wrap"



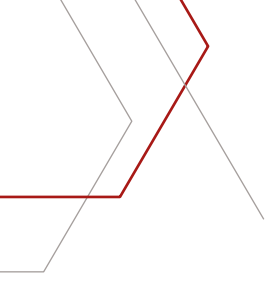


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PROJECT DETAILS

	Case Study Number CT-CS:001	Design Pressure 50 BARg	
	Repair Summary 36" Elbow	Operating Pressure 10 BARg	
	Client Shell & BP Refinery	Design Temperature 36°C	
	Service Type Crude oil	Operating Temperature 20°C	
	Line Size 36 Inch	Base Material Carbon steel	
	Line Class 11011		



ANOMALY DESCRIPTION

Severe external corrosion was noted on the 36" main crude feeder line. A wall thickness scan was done and a minimum of 3,5mm wall thickness remained on several bad spots of approximately 200mm in diameter.

The original nominal thickness was 11.5 and the minimum required design thickness was 5,0mm

INTEGRITY CONCERNS

Further deterioration of the pitting corrosion could result in leaking of process which would have detrimental effects to the refinery crude oil supply due to possible equipment downtime. Furthermore, leaking process could result in major fire and environmental hazards.

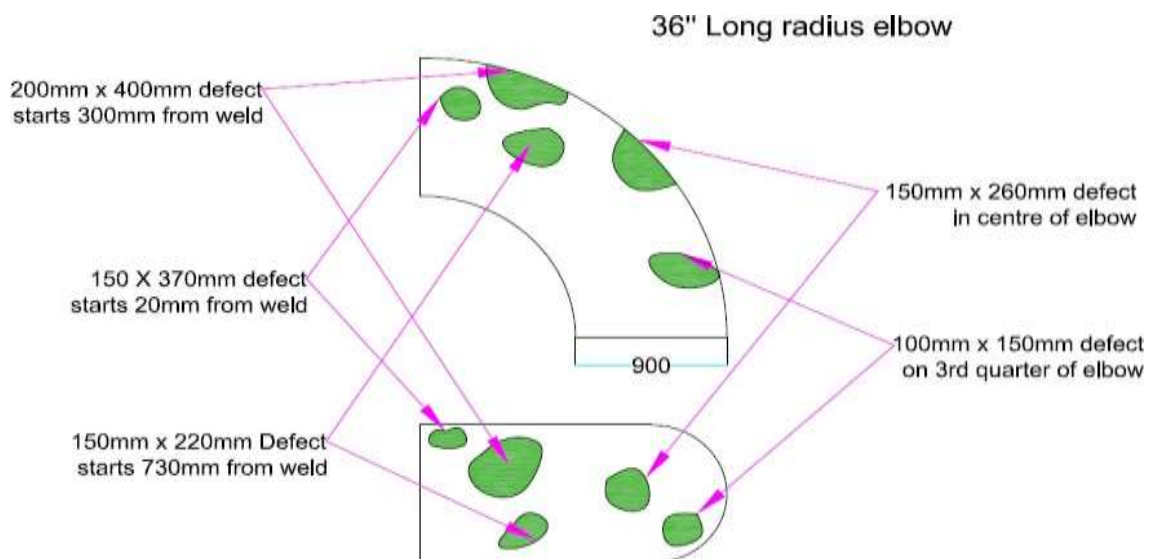


Figure 1 An illustrated view of the internal pitting

THE CARBONTECH SOLUTION

Surface Preparation achieved: SA2.5

Product used: Revowrap 110

Engineering calculations: ASME PCC2

Layers used: 2 layers

Post cured: Not required.



CONCLUSION

A successful repair was implemented that will allow the elbow section to remain in service for the next 20 years. The elbow was further painted with a UV protection to protect it from natural elements. The repair was completed in 2 days including prepping and installation.



Figure2: The completed laminate repair solution.



Figure 3: Contractor: Beruseal Pty Ltd



CARBONTECH

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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

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PROGRESSIVE COMPOSITE ENGINEERING

