



KINDER MORGAN

Crankshaft trial with Kinder Morgan Case Study



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METAL PROTECTION

Coating of crankshafts for trial in a outside exposed environment

Location	Houston
Local Environment	Ship Canal
Date	June 2017
Condition	Good at time of application
Total Coatings	Several crankshafts
Substrate Type	Machined steel
Duration	2 hours

Summary

HIS Fire & Safety were asked to protect a number of machined crankshafts with Oxifree TM198 as part of a product trial for Kinder Morgan.

Two of the coated crankshafts were placed into their crates and placed in the field where they would be exposed to the elements (wind, rain, humidity, UV rays etc.)

In June 2018 the coatings were removed from the crankshafts and the metal was found to be in perfect condition.

Introduction

Kinder Morgan is one of the largest energy infrastructure companies in North America.

They own an interest in or operate approximately 85,000 miles of pipelines and 152 terminals. Their pipelines transport natural gas, gasoline, crude oil, carbon dioxide (CO₂) and terminals store and handle petroleum, chemicals and other products.

Objective

The crankshafts were to be coated and put into the field where they would be exposed to the environment. Given the proximity to the coastline this could include salt water and high winds along with humidity and high temperatures. The substrate would then be checked for effectiveness in due course.

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The crankshafts were brought into the workshop to be coated.



After



Before



After



Case Study

Process

The machined shafts were inspected to ensure they were free of any oxidation and cleaned of loose dust and debris prior to application.

On machined surfaces, this can simply be done with a cloth or wire brush.

The Polymelt 50 machine was then used for application and a coating of 4mm applied.

The shafts were then taken out into the field for testing.

Solution

The Oxifree TM198 coating was applied to the entire crankshaft to protect from any corrosion to the machined surfaces.

The coating provides immediate protection as the TM198 material, when applied, removes all oxygen and any moisture inside the encapsulation.

TM198 exudes a vegetable based inhibiting oil onto the surfaces thus eliminating any potential for corrosion to take hold.

Conclusion

HIS were invited to the removal of the TM198 and as the photographs show the machine shaft was 100% free of corrosion.

This machined surface was protected even in the harshest of scenarios. Typically the shaft would need to be re-machined or most likely scrapped.

This test proves TM198 will extend the life of metal assets and protect them from the harsh environment they are exposed to, bringing savings to both Capex and Opex.

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Upon removal of TM198 the protection is clearly seen, the surfaces were free of corrosion.

