

Oxifree

DETEN Chemical Case Study



Location: Industrial Complex ,Bahia (BA)

Period: 26/03/08 to 03/04/08 (09 daily in the plant)

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1.1A - Reasons for intervention

Application of Oxifree coating for corrosion protection to improve safety and reduce ongoing costs.

1.1B - About the services

This application of Oxifree polymeric resin will show Oxifrees ability to seal against atmospheric corrosion and the action of the extreme operating conditions in which the valves and flanges are subjected.

1.2 - Prior to the application

It has been found that there are pockets of corrosion in an advanced stage, due to chemical spills from the operation of the Tower. Once the corrosion cell is formed, the trend is that the damaged areas have aggravated the process along because of the aggressiveness of the plants products, combined with the corrosive action of the atmosphere combined with moisture in the air.



Gate valves with varying damage to almost all surfaces mainly due to galvanic corrosion



Ball valve with corrosion at its most critical on the elbow connector

1.3 - After preparation

The surface preparation was completed by the use of a steel brush as well as 36 and 50 grain sandpaper. This enabled the removal of oxides and contaminants deposited on the components before the application of Oxifree.



1.4A - During the service

The work on implementing Oxifree had been adversely affected by climatic factors, among them be mentioned, the incidence of rainfall and the presence of high winds speed. This situation can be avoided with the use of a work tent.

1.5A - Before and After the application

The mechanical components are sealed against a likely increase in the atmospheric corrosion process and because of the presence of sulphur oxides, which once reacted with moisture in the air leads to the formation of compounds such as aggressive H_2SO_4 . This phenomenon is called etching and causes a decrease in service life of valves and fittings of pipes.



1.5B – Before and After the application on flange heads

It is recommended that an inspection to verify the efficiency of protection from Oxifree within three months from the date of application. The purpose is to examine the progression of corrosion in other components, which were not covered this time with the preservation afforded by the protective coating.



1.5c – Before and After the application on flange heads and globe valves

Protection of the substrate surfaces is assured with the use of Oxifree however complicated the shape as you can see below.





1.5D – Before and After the application on an access panel at the base of the main chemical cooling tank



2.0 - Conclusion

The coatings made on the external surfaces of the flanges and fittings of the pipes, valves and access panels will prolong their useful life greatly reducing the chance of functional failure as well as reducing the unsightly appearance of corrosion anomalies. The situation at Deten Chemical is quite particular to the chemical production industry as general atmospheric and galvanic corrosion is greatly accelerated by the constant presence of chemical contaminants. Oxifree was able to protect the structures against normal corrosive factors as well as chemical factors specific to this site. Safety has been greatly increased as a result and the cost of equipment repair and replacement has been greatly reduced. Deten are very happy and impressed with the results Oxifree TM198 has afforded them.