

COVAC COMPLETION REPORT

Client	-	XXXXXX NHS Trust
Address	-	XXXXXXXX Hospital Central England
Site Contacts	-	XXXXXXXXXX
Project Brief	-	The Internal / External Refurbishment of 4 No. Truff Tanks
System Specification - <i>Internal</i>	-	COPON Hycote 165PW Solvent Free Polyurethane.
<i>External</i>	-	COPON Hycote 152LV Solvent Free Coating.
Total Film Thickness - <i>Internal</i>	-	1000 Microns
<i>External</i>	-	500 Microns
Completion Date	-	2nd May 2007
Site Supervisor	-	Robin Bailey
Report Prepared by	-	Adrian Emmett
COVAC Contract Ref:	-	548

SUMMARY OF WORKS

The Brief

Internal Re-Lining of 4 Truff Tanks

The Brief

2 No. compartments of a total of 6 No. compartments were already successfully re-lined by our Company in 2005. There were 4 No. remaining compartments, which are each, sized at approximately 9M x 2.3Mx 2M high.

The internal substrate of each compartment was previously painted with two coats of epoxy paint. The first coat was blue whilst the second coat was white. The second coat (white) was de-bonding from the first coat (blue) in sheets of various sizes. The most likely cause of this was contamination or inadequate preparation between coats. The first coat had reached the end of its useful life due to sub-film corrosion, low film build and subsequent deterioration.

If left untreated, the corrosion would have continued to spread beneath the existing epoxy paint and become more severe and, subsequently, become more porous, allowing additional corrosion to take place beneath it.

As the steel continues to form rust, it would expand, causing the rust to fracture from the surface and form in layers and laminations.

The corrosion would also continue to be a potential source of nutrients for bacteria such as micro-aquatic organisms, which can lead to Legionellosis.

The existing tank covers were constructed of GRP and were in good condition with the exception of the internals, which, again, had been painted with a coat of white epoxy, which was de-laminating from the GRP substrate.

We therefore proposed to carry out the following:

Mechanical Preparation

Spray Application

Externals of the Tanks

The Brief

The externals of the tanks were beginning to show signs of sub-film corrosion and subsequent de-bonding. We therefore recommended the following: -

Mechanical Preparation

Spray Application

Externals of Lids

The Brief

The hospital's 3 main potable CWS tanks were covered with GRP fabricated lids, which were leaking & in a poor state, allowing the ingress of rainwater to enter the tanks. As two of the tanks are supplying drinking water to the hospital, water quality was of a major concern.

Previously the lids were externally coated with a white epoxy coating, which was delaminating from the original GRP substrate due to poor preparation & the coatings lack of elongation properties. (See photographs)



Therefore we proposed to carry out the following: -

GRP Mechanical Preparation

Brush & Roller Application

INTERNAL OF THE TANKS

This photographic report combines images from all four compartments (reduced report)





These photographs show the internals of the tanks, prior to any preparation work. The photographs clearly show the deterioration of the epoxy coating and delaminating of the GRP lining.







The following photographs show the GRP lining, which had to be removed utilising mechanical chisels revealing the epoxy coated steel substrate.







These images are of the internals of the tanks after the GRP lining has been removed from all internal surfaces.





The photographs above clearly show progressive corrosion to the steel due to moisture entrapment between the steel and GRP lining substrates.



The above and following photographs show all steel surfaces and GRP roof during and after having been prepared by COVAC operatives by means of dry abrasive grit blasting equipment in order to achieve the required surface profile for adherence of the COPON Hycote 165PW Coating System.





All internals of the tank were resealed and stripe coated to ensure all intricate areas were coated prior to the 1st full coat of Cream COPON Hycote 165PW Solvent Free Polyurethane being applied by brush to a nominal Wet /dry film thickness of 500 Microns.

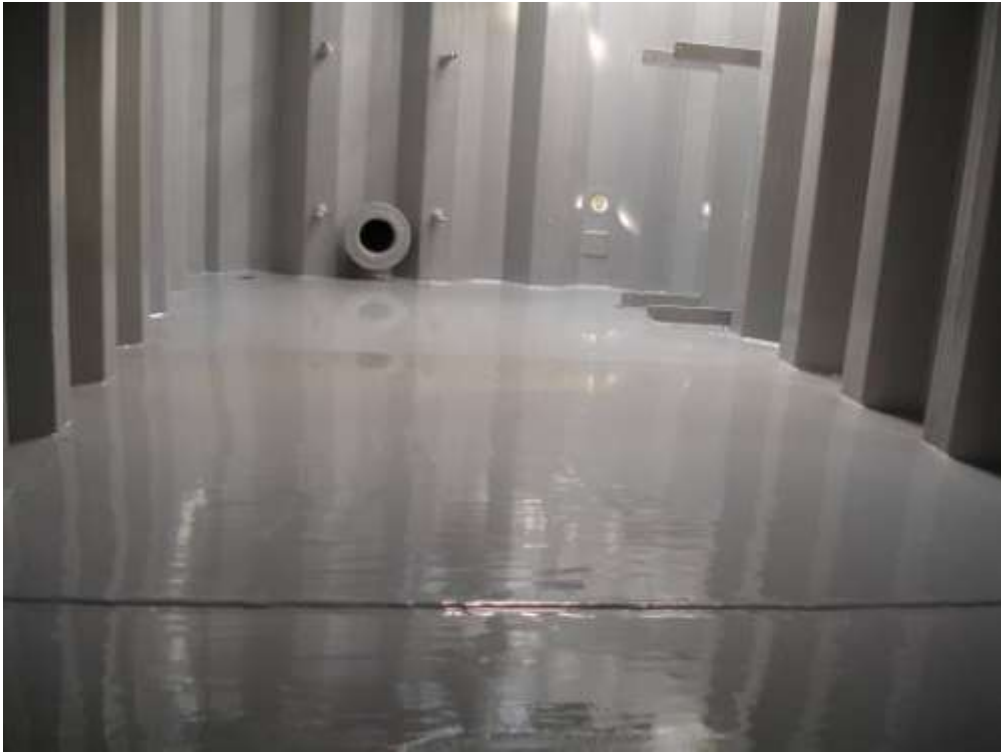


The following photographs show the tank steel substrate having been fully coated with COPON Hycote 165PW Solvent Free Polyurethane (cream).





The intricate areas were again stripe coated with COPON Hycote 165PW Solvent Free Polyurethane (grey) to ensure full coverage is obtained during the application of the full coat. These photographs show the full application of the 2nd coat of COPON Hycote 165PW Solvent Free Polyurethane (grey) in order to achieve a total, nominal dft of 1000 Microns (1mm) and between 1500 – 2000 (2mm) over all stripe coated areas.



EXTERNAL OF TANKS





These images show the external of the tanks prior to any preparation work by our site operatives.





Originally, the GRP lid was coated in an epoxy paint, which had begun to delaminate and the above photographs show the roof preparation work in the manual removal of the failed coating.



The following images show the exterior steel surfaces after having been prepared by COVAC operatives by means of dry abrasive grit blasting equipment in order to achieve the required surface profile for adherence of the COPON Hycote 152LV Coating System.





The areas not required to be coated were initially masked off prior to the 2no. coats of airless spray application. The following photographs show the completed coated external surfaces of the tanks of metallic silver coloured COPON Hycote 152LV to a Dry Film Thickness of 500 Microns.







These images show the GRP roof having been resealed and stripe coated prior to the manual application of COPON Hycote 152LV.



The following photographs show the roof being manually coated with COPON Hycote 152LV High Performance Coating.

