



CORROCOAT NEWS

September 2018

MASSIVE BIOMASS STORAGE TANK GETS THE CORROCOAT TREATMENT



Mlada Boleslav Power plant in the Czech Republic provides heat and power

to a Skoda car factory as well as heating to apartments in the nearby town. In order to reduce CO2 emissions there has been an increased use of renewable biomass for generating electricity.

Our partners in The Czech Republic – CorroTech were commissioned by ŠKO-ENERGO to repair and recoat the interior walls of a 35m dia x 8.8m high biomass storage tank – an area of 1003m² in all.

The surfaces to be coated were cleaned and prepared by a combination of wet abrasive blasting and ultra high pressure water jetting at 2500 bar. This was followed by the repair of surface air voids and cracks. These were fully exposed then primed with two coats of Polyglass WCP before being filled with Corrofill VE.

The cracks were laminated with L600 and 390g fibreglass matt and Corrocoat Renderpol was applied to ensure the integrity of the damaged areas. The walls were then treated with two coats of VEF at 500 µm. Despite a long period of heavy rain the contract progressed to schedule and will be completed on schedule.

In this issue

Page **2**



Expanding Our Russian operations
New Appointments
Improvements to Plasmet ZF

Page **3**



Stainless Steel Fibre Sorter

Page **4**



Corrocoat Indonesia Wins Prestigious New Contracts
Extending the Life of Pipe Lining

Page **5**



USAB Reactor Presents a Site Safety Challenge
Turnkey Solution for Sludge and Salt Slurry Thickeners

Page **6**



PWI Casing Pipes Protected with Polyglass VEPG and VEF
Balcony Frames & Louvres on Maltese Apartments Rejuvenated

Page **7**



Storage Tanks Annular Plate Ring Coating Repairs
Thermodynamic Pump Monitoring

Page **8**



Corroglass 600 Provides the Solution When Iron Chloride Causes Corrosion Problems
2018 Exhibitions



Vera Zayarina

Expanding our Russian operations



To support expansion in the exciting and rapidly growing Russian market, **CORROCOAT LLC (Moscow)** and service company **CORROCOAT-URAL LLC (Berezniki)** were established last year.

CORROCOAT LLC now has eight staff - the latest addition to the team is Vera Zayarina who joins as Technical Corrosion Liaison Engineer and Interpreter. CORROCOAT-URAL LLC operates from a fully equipped 1000m² workshop with 2500 m² of adjacent open area.

Many contracts have been secured and trials are in progress to prove the effectiveness of Corrocoat systems including several at chemical plants, fertilizer manufacturers, refineries and power stations. A service company in the Moscow region is planned by the end of 2018 and this will be another significant step which will lead to further expansion in the region.

NEW APPOINTMENTS

We have made two key appointments to help us build on recent growth and reach the goals we have set.

Simon Cappleman is our new Pump Manager. The design, manufacture, assembly, repair and recoating of rotating equipment – principally pumps, is a key part of our business and Simon has over 20 years' experience in similar roles within the industry. In his new role, he will be responsible for the day to day running of the Pump Division. His tremendous knowledge and skills will be a welcome asset in ensuring we continue to meet the demands of this division's growing customer base.



Patrick (known as Paddy) Bowes has joined us in the newly created position of Marketing Manager. He has extensive marketing experience in a number of sectors from heavy engineering and manufacturing through to establishing and running an on-line retail company in the healthcare sector. Paddy also has experience in the decorative coatings industry having spent nine years working in trade and retail marketing on the Johnstones paint brand. In his new role Paddy will be responsible for: coordinating marketing campaigns, creating and publishing on line and print material and managing communications with our worldwide network of licensed partners.



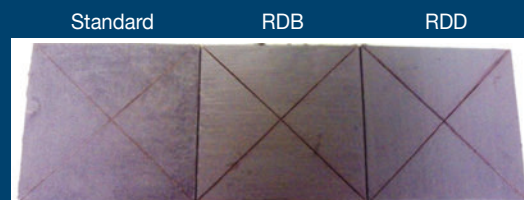
Improvements to Plasmet ZF

Plasmet ZF has been used for many years and has built up an excellent reputation as a surface tolerant coating giving long life and exceptional service when applied to well-prepared surfaces.

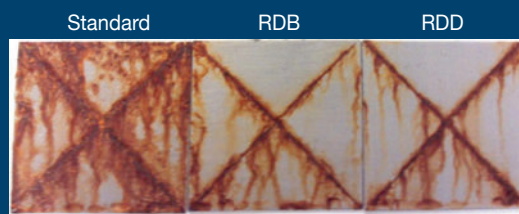
As we are committed to an ongoing programme of improving the performance of all our coatings we recently developed a biocide version of Plasmet ZF which would ameliorate slime, fungal and moss growth long term in permanently damp conditions.

As yet we are unable to compare how well this biocide version works in real life as our tests have still found no growth on either version in moss/slime conditions. However, we have found some interesting results in corrosion protection performance. In tests, our standard ZF performs extremely well and remains firmly adhered, protecting the undamaged metal surface but rust did occur in saw cuts on the sample, causing staining.

The biocide version (RDB) and a modified version (RDD) without the biocide have protected the exposed cut from corrosion - a big improvement we think. Take a look at the pictures! The product has already been modified and all Plasmet ZF supplied after March 2018 is the RDD version.



Before Testing



After 18 weeks Salt Spray

STAINLESS STEEL FIBRE SORTER



CORROCOAT PARTNER

Corroserve (UK)

THE INDUSTRY

Paper and Pulp

THE CHALLENGE

Corroserve received an enquiry for a coating system to protect the insides of stainless steel fibre sorters which are used in the screening of paper grades. A Corroserve engineer inspected the units and was advised that various types of linings including epoxy and elastomeric epoxy products had been tried but, in the customers own words: "had 'disappeared' due to the highly abrasive nature of the contents." The customer had also tried ceramic tiles, but over a short period of time the tiles disbonded from the grouting material and then travelled through the system blocking the filters and disrupting production.

THE SOLUTION

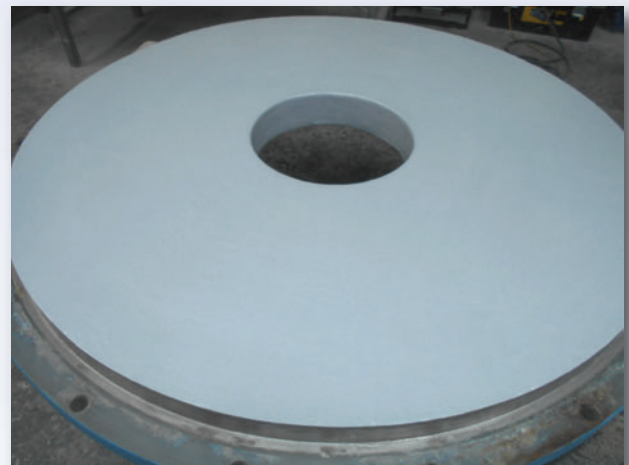
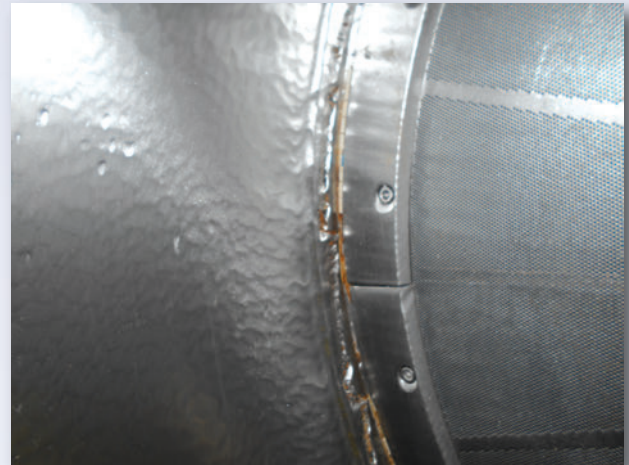
Corroserve proposed the application of an abrasion resistant coating system - Plasmet HTE. A trial was carried out on a steel test plate which was coated and attached to the shell of the unit and placed in service. The system performed well and a quotation was provided. The Corroserve package was to remove any existing failed coating and tiles, surface preparation and the application of the Plasmet HTE coating system.

The following scope of works was carried out:

- Machined surfaces and uncoated areas were masked and protected prior to preparation.
- Any existing lining was removed and the stainless steel substrate abrasive blast cleaned in accordance with ISO 8501-1 Sa 2 to achieve a surface profile of 75 μm .
- A primer coat of Corrocoat EP1 was applied.
- The full surface area was laminated using Multiaxial glass fabric wetted out with laminate resin and rolled into place.
- Plasmet HTE was applied to achieve the specified minimum DFT of 2000 μm , increasing to 3000 μm in heavy wear areas.
- The system was spark tested to ensure the coating is free from holidays and pin holes.
- On completion the coating was post-cured at 60-80°C for at least 8 hours to ensure full cure and provide the best abrasion resistance.

RESULTS AND BENEFITS

As the unit flexes during operation, the Multi-axial glass fabric provides additional structural strength to the coating system. Plasmet HTE provides the unit with excellent abrasion and erosion resistance and also provides superior resistance to chemicals across the full pH range and many solvents.



This material has been successfully used in cyclones, chemical processes, pump impellers and casings which require impact and abrasion protection. Multiple fibre sorter units have been treated and are back in use - compared to previous systems, significantly improved life cycles are anticipated.



CORROCOAT INDONESIA WINS PRESTIGIOUS NEW CONTRACTS

Corrocoat Indonesia's outstanding reputation for providing a quality service is resulting in an expanding customer base. Here are three examples of recent contracts.

Indah Kiat Pulp & Paper Mill – Vacuum Pump Refurbishment

Carried out in their Bekasi workshop, this 10-ton vacuum pump was suffering from low suction pressure due to corrosion and erosion wear on the cones in the rotor area. The pump was disassembled, machined, abrasive blasted and the internal surfaces recoated with 600 Series at 1500µm. Finally, the rotor was balanced and the pump reassembled and tested.

Prover Loop Metering Pipework Coating for Pertamina Dumai Oil Refinery



This oil refinery has a prover loop metering system to measure the amount of oil entering and leaving the refinery. However, this was occasionally out of commission due to corrosion on the internals

of the pipework. Corrocoat's proposal was Polyglass VEF at 750 µm and Polyglass VE Veilcoat at 250 µm to provide long term corrosion protection and a smooth finish to allow the "pig" or metering system to flow effortlessly and provide accurate readings. An Agmec pipe blaster and sprayer was used on this contract.

Sea Water Pump Refurbishment at Indramayu Power Station

This coal fired power station uses carbon steel CWP pumps to supply sea water to this power station's cooling system. It was noticed that one of the pumps was suffering from heavy corrosion on outer and inner parts. Corrocoat Indonesia was contracted to surface prepare and apply Poly 100 at 1000 µm and Renderpol as filler material to prevent corrosion failure in the future. Work on the 12m high x 1.8m diameter pump was completed in 10 days.



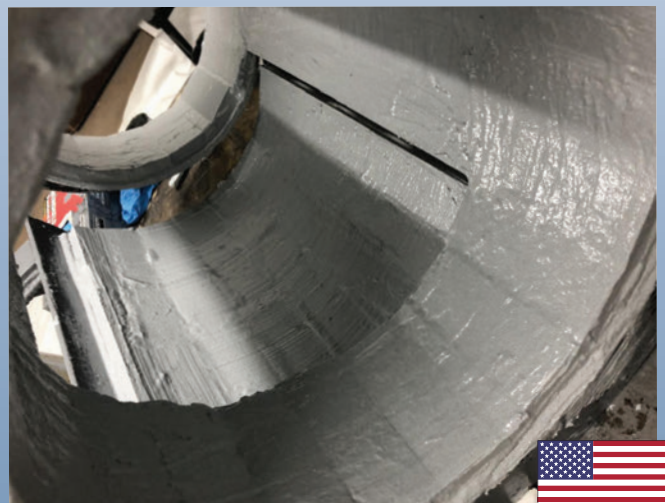
EXTENDING THE LIFE OF PIPE LINING

A timber mill in the USA had to spend a lot of time and resources replacing sections of pipework in its debarking plant due to accelerated wear from high velocity bark and wood chips. When approached for advice, Corrocoat USA recommended that to increase the life of the piping, alumina tiles with Plasmnet HTE as a high strength adhesive/grouting compound will provide the best solution.

99.9% pure alumina tiles wear 10 times slower than carbon steel. Plasmnet HTE, with its excellent chemical resistance up to 300°F, far outperforms the silicone compounds normally utilized to install similar tiles.

Plasmnet HTE was applied by brush to achieve a DFT of 10-20 mil to prime the surface. The tiles were embedded into the Plasmnet HTE with a maximum gap of 1/8" between. Once all the surfaces were tiled the joints were filled and the tiles over coated with Plasmnet HTE.

After 5 months continuous use the tiles show no signs of thickness loss – proving that Corrocoat's recommendation will increase the life of an unlined pipe section many times over.



USAB REACTOR PRESENTS A SITE SAFETY CHALLENGE



CORROCOAT Benelux B.V. has corrosion protected a USAB reactor. USAB (up flow anaerobic sludge blanket) reactors are widely used to treat waste water on large scale agro-industrial sites. Corrocoat were called in as corrosion damage had occurred in the reactor after just two years' service, due to aggressive anaerobic conditions.

A major challenge was site safety as the reactor could not be emptied. It was very important that comprehensive safety procedures were in place and that all personnel were equipped with the correct PPE and had received training in its correct use. A risk assessment to identify the measures necessary to control the risks was very important in this case.

Corrosion was present at the top level of the reactor, so the top 55cm of the wall inside the reactor openings were to be blast cleaned and re-coated to prevent further corrosion. The total area to be treated was 56 sq m. Having lowered the liquid level in the reactor, a check was made to



The reactor wall after blast cleaning showing the anaerobes damage

ensure that there was sufficient oxygen and a total absence of harmful gasses. The area to be treated was blast cleaned to ISO 8501-1 Sa 2, pressure washed with biocidal wash to free the surface from bacteria, water washed and Corroglass VSF applied.

The work was completed on schedule without compromising quality and safety.

Turnkey solution for sludge and salt slurry thickeners



Our Belarus operation – Corrocoat AKZ - has carried out a number of contracts for JSC Belaruskali, one of the world's biggest producers of potash fertilizers, including the repair and corrosion protection of sludge and salt slurry thickeners.

These thickeners are used where potash ores are processed by the hot leaching method. The main problems are high operating temperatures (up to 105°C) and a highly abrasive chemical medium. Surface preparation is a particular challenge due to the high salt content in the atmosphere. A number of coatings had been tried, but all gave poor results.



Corrocoat AKZ's turnkey solution was: thickener barrel internals blast cleaned to ISO 8501-1 Sa 2 then washed with Corrocoat Chlor*rid solution until the accepted salt level was achieved. All corrosion pits were filled with Corroglass 602, and 610 g/m² multidirectional laminating cloth applied to welds, followed by a coat of Corrothane XT at a dft of 700µm. Finally, a second coat of Corrothane XT was applied to build a total dft of not less than 1200µm.

PWI casing pipes protected with Polyglass VEPG and VEF

PWI casing pipes used in oil and gas production are subject to high abrasion and chemical attack from the product passing through them and for maximum flow efficiency it is vital that all internal surfaces remain corrosion free and smooth to reduce friction and improve flow.

Al Huda Corrosion Treatment was commissioned by Qatar Petroleum to prepare and corrosion protect the insides and outsides of 40 off 12.5m long x 7" diameter carbon steel casing pipes.

Having removed all soluble salts and grease, the pipes were abrasive blast cleaned to Sa 2 with a profile of 50 µm minimum. Using their centrifugal pipe rolling rig the internal walls were coated with Polyglass VEPG to minimum DFT of 1,000 µm and the external surfaces airless sprayed with Polyglass VEF to the same thickness.

Polyglass VEPG is ideal for this application. A two-pack



vinyl ester/acrylic co-polymer enhanced with flaked glass, it is designed for use in immersed or aggressive atmospheric environments where superior resistance to chemical attack is required. It is unaffected at temperatures up to 90°C.

After thickness and holiday testing and threads application the pipes were returned to the customer where they are now back in use and are performing well.

BALCONY FRAMES & LOUVRES ON MALTESE APARTMENTS REJUVENATED



Tigné Point is a waterfront development comprising 66 luxury apartments within a 13-storey building. Awarded 'Best Residential Development for Malta' at the 2017 European Property Awards, it is set on a headland overlooking Valletta with each apartment having stunning panoramic sea views and a large terrace.

Seawater spray is one of the most corrosive forces in nature and the developers were concerned that the apartments'



balcony frames and louvres were showing signs of unsightly surface corrosion. Our licensee in Malta – Xn-Teq Company was therefore contracted to prepare and protect the corrosion damaged frames and louvres.

The solution was to remove the metal frames and louvres, then blast clean them to ISO 8501-1

Sa 2. This was followed by hot dip galvanizing to 200 µm, Plasmet Z Galv two pack epoxy coating to 150 µm, and Plasmet ZF to 250 µm. The project is ongoing and is estimated to be finished by late 2018.

This contract is another example of regardless of wind and wave, Corrocoat can offer proven long-term protection in any aggressive marine environment.



STORAGE TANKS ANNULAR PLATE RING COATING REPAIRS



QAFAC - Qatar Fuel Additives Company contracted Al Huda Corrosion Treatment to repair 30 defective areas of coating on the annular plate rings of four large storage tanks including the lamination of overlap patches. The substrates were carbon steel and concrete.

To achieve an effective, long-lasting repair, the defective coating was cut out and damaged areas suction blasted

to ISO 8501-1 Sa 2 to a profile of 50 µm. These were primed with Lamination Resin 200 then filled and reprofiled using Corroglass 202, followed by lamination by multi-directional Fiberglass Cloth and L200 Laminating Resin.



After a final topcoat of Corroglass 232 & 252, the dry film thickness was checked with a coating thickness gauge and spark tested at 6 kV to ensure the absence of pin holes.

The storage tanks will now be able to resist their highly corrosive desert environment for many years. The professional application of corrosion protection provided by Alhuda Corrosion Treatment impressed the client who has subsequently awarded them further contracts to treat a wide range of other assets including complete process vessels, manhole covers and frames.

THERMODYNAMIC PUMP MONITORING



Corroserve, have invested to update their Thermodynamic Pump Monitoring (TPM) system to the latest equipment and software developed exclusively by Corrocoat Japan. The equipment has been calibrated and certified by the Yamari Standard Laboratory in accordance with relevant Japanese standards.

The new TPM system calculates pump efficiency by the thermodynamic method based on the first law of thermodynamics (The increase in the internal energy of a thermodynamic system is equal to the amount of heat energy added, minus the amount of work done by the system on its surroundings). The effect is that energy losses in the pumping process are transferred to the pumped liquid in the form of heat energy, causing a rise in temperature.

The unit measures two parameters (temperature and pressure) at the pump suction and discharge to compute pump efficiency. By inputting the motor power consumption, the system calculates the flow rate. The performance test proceedings are for class C pumps (industrial). The TPM unit uses real time monitoring data, manual input values and algorithms to calculate pump performance.

The benefits to the customer of periodic testing with the

TPM system are that it highlights the performance of a pump over its working life which can lead to some significant cost savings for the customer:



1. TPM identifies pump wear and measures changes in efficiency, providing economic justification for pump refurbishment (or replacement), and the optimum time for any work to be done
2. TPM also identifies the most efficient pumping conditions and provides the customer with a detailed & accurate report of a pump performance and efficiency.

The customer can then make informed decisions regarding refurbishment and possible upgrade using our Fluiglide coating system. The financial investment in TPM testing can be quickly recouped by the customer in savings gained due to the lower energy costs of running a more efficient pump, savings that might be increased even further by using the Fluiglide system to further enhance pump efficiency.

CORROGLASS 600 PROVIDES THE SOLUTION WHEN IRON CHLORIDE CAUSES CORROSION PROBLEMS



Corrocoat Benelux B.V. was asked to tender for the refurbishment of a mixer at a waste water treatment facility at Delftland in the Netherlands.



The mixer had been coated with a conventional paint system but due to the fact that iron chloride was now present in the chemical process, this paint system was no longer resistant and corrosion had started to occur. Corrocoat's solution was to coat the mixer with Corroglass 600 system and VS with a dft of 800 – 1000 µm after first blast cleaning to ISO 8501-1 Sa 2.

Their main competitor submitted a tender with an equal price but the Corrocoat proposal was accepted as it was much more detailed and specific with regard to inspection and quality standards. In addition, a follow-up inspection and touch-up service was included in the price – these 'extras' were decisive in the selection. The contract was awarded and completed on schedule. The customer is delighted with the results, recognizing that the coating, its application and the exceptional quality of work met their wishes exactly.

2018 Exhibitions



In 2018 Corroserve has participated in a number of small 'table-top' exhibitions aimed at the nuclear, defence, maritime and petrochemical sectors. These have proved to be a cost-effective way to meet new contacts in these key markets.

The Pump Centre Conference and Exhibition, Telford

We were able to meet visitors from utility and water supply companies, the Environment Agency plus other pump users; showing how Corrocoat could improve the reliability of pump installations and reduce maintenance and down time.

EDF Energy – Heysham Nuclear Power Station

Around 1500 employees are based at Heysham with many involved in maintenance and we were able to meet many key personnel.

Essar Oil UK – Stanlow Oil Refinery

This is one of the largest refineries in Europe, with many processes to operate and maintain. This facility requires corrosion control support in many areas and we met contacts old and new.

BAE Systems Maritime

BAE Systems is a global company engaged in the manufacture of defence and security systems in the air, on land and at sea. This event provided us with a major opportunity to promote our products to marine defence industry specialists.

Yorkshire Water Planned and Preventative Maintenance of Pumps Conference

This event provided us with the opportunity to demonstrate our expertise in this area.



Corrocoat – Leading the field

Established in 1975, Corrocoat is one of the world's leading names in extra-durable and corrosion-resistant paints and coatings with a proven track record in many market sectors including petrochemicals, oil & gas, power generation, mining, marine, structural steel, water & waste and renewable energies.

With service lives often measured in decades, Corrocoat materials offer excellent long-term and trouble-free service, not to mention great value for money. With a network of some 36 licensed partners around the world, all offering the same highly regarded technical support, you're bound to find a Corrocoat product nearby.

Corrocoat News is produced by:-

CORROCOAT

Forster Street, Leeds,
LS10 1PW, England

Telephone: +44 (0)113 2760 760

Fax: +44 (0)113 2760 700

E-mail: info@corrocoat.com

Visit our website

www.CORROCOAT.com