CORROCOAT news

May 2024

Also in this issue...

Image courtesy of our partners in Kuwait, Aja Technological Solutions Co.

A MESSAGE FROM OUR MANAGING DIRECTOR
Phillip Watkinson

Welcome to this edition of the Corrocoat News.

As we start the second quarter of 2024, I'm pleased to share my first message as Managing Director. The year has started positively for our business as we lay the foundations for a solid year ahead with exciting projects and growth unfolding around the world.

In the coming months, we will be taking time to look back at 50 years of Corrocoat supporting industries worldwide. Thanks to the contribution of employees, past and present and our ongoing investment in research and development, we have innovated the coatings industry, successfully providing practical and cost-effective solutions to corrosion issues in many countries.

Whilst it's important to pause, take stock and take time to recognise how far our business has come, it's also important to look forward. And we have much to look forward to as we grow and increasingly support the global recycle, reduce, reuse agenda - enabling largescale capital plant and equipment to be used for longer.

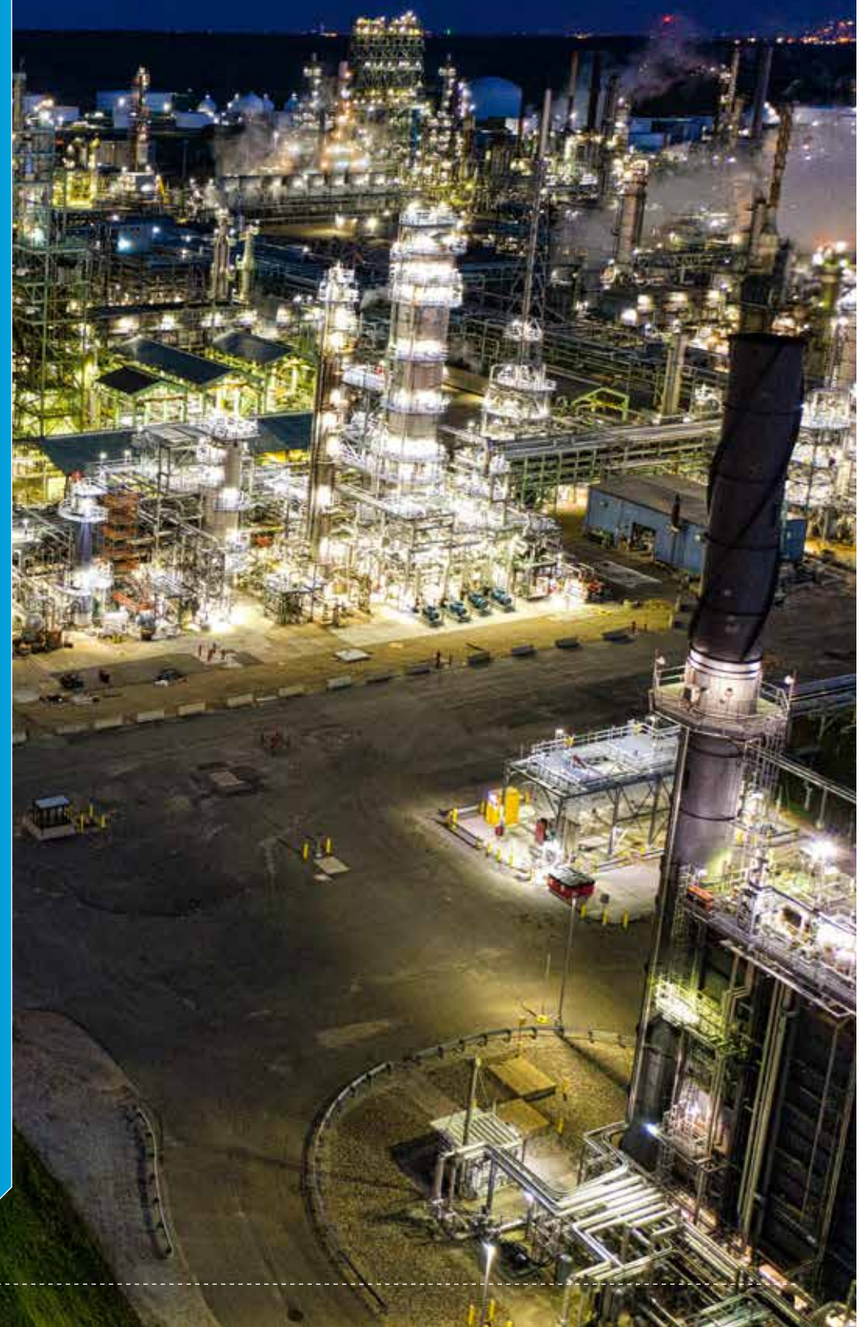
You can read more about some of the more recent project in the coming pages.

With best wishes

Phillip

Phillip Watkinson

50 years of supporting industries worldwide



Reinforcement for Y Pipe

A client at a petrochemical plant in the Czech Repiblic required reinforcement of a carbon steel 500mm diameter pipe, spanning 16m². The pipe was part of a refinery tower, transporting nitrogen, and was suffering from corrosion under insulation, which comprimised the thickness and integrity of the substrate, in certain areas.

Having experienced the quality and integrity of work carried out by Corrotech on numerous projects in the past, the client turned to them once again, as a matter of urgency, to provide the most effective solution for the problem; declaring repair of the issue an emergency.

It took the team 4 days to complete the project in-situ. The first step was to clean the corrosion deposits, this was done via hand tools, before priming with LR600. Four layers of multiaxial fibreglass cloth were then applied to provide strength and reinforcement to the pipe. The complicated shape/'Y' nature of the pipe, posed a challenge in terms of the wrapping of the lamination cloth, which the team effectively navigated. The team also had to carry out the work and take extra precautions with the wrapping aspect, as a result of the nitrogen continuing to run through the pipe, with a surface temerature of 70°C. Polyglass VE was applied by hand, and the work was then tested and assured as per the designed inspection and test plan.

Corrosion Protection for new large diameter Gas Blower

Corrocoat Japan recently provided corrosion protection for a newly manufactured gas blower rotor intended for a gas cleaning system at a chemical plant. The impeller and shaft, with an external diameter of 2.57m and a length of 8m, weighed over 3 tons and was destined for installation at a chemical plant aimed at removing toxic gases from various chemical manufacturing processes.

Due to the size of the blower, the team at Corrocoat Japan took 2 weeks to complete the project on-site. Special facilities were constructed for blasting and the application of Polyglass VE and VE Veilcoat to ensure that the equipment had suitable encapsulation from the surrounding environment.

As part of the project the large rotor required dynamic balancing prior to carrying out coating quality assurance testing.

Corrocoat Japan was specified based on previous corrosion resistance tests conducted by the client and subsequent positive experiences with the refurbishment of existing equipment. The client decided to specify the use of Corrocoat products for new equipment going forward, thereby prolonging the service life from the very start.

The efficiency of both the team and the products used led to the client commissioning Corrocoat Japan for further work, securing contracts for 4 units of similar dimensions to date. exceed a further 10 years in service.

Before

After

Repair and Strengthening for Pre-stressed Concrete Pipe

A critical water supply spigot and socket concrete pipeline, operating at 25 bar of working pressure, at the Vygeboom Dam in South Africa, suffered from spalling corrosion and burst. The dam, constructed to store and regulate floodwaters of the Upper Komati River near Badplaas in 1968, aimed to create a reliable water supply for proposed power stations and stabilize downstream river flow.

The pipe failure, characterized by a 30cm x 20cm hole and a 2mm wide crack around the entire circumference, necessitated the shutdown of the entire line until repairs could be made. The client sought assistance from Corrocoat South Africa – Johannesburg for a comprehensive solution.

Spanning over 6 days, the critical project involved external excavation and traversing 200m within the pipeline for internal surface preparation, coating, and reinforcement. The team initially blast-cleaned the internal and external surfaces of the concrete pipe. Specialist concrete primers were then applied to reinforce and bond with the immediate concrete surface layer. The holes were filled with Corrocoat Corrofill E, and Corrocoat Zip E was applied to the pipe internals, while Polyglass 100 was applied externally. The internal and external integrity of the pipe was further reinforced using a carbon fibre repair system.

Design calculations were performed for pipe burst resistance, focusing on fibre orientation in the hoop direction for burst resistance. Additional calculations and layers of woven roving carbon fibre were employed for the holed area, while separate calculations for unidirectional carbon reinforcement over the crack were carried out to prevent pipe deflection.

The repair not only saved time but also capital compared to replacing the entire spigot with a new, unprotected fabrication. The reinforcement carried out by the team ensured the prevention of future failures at this critical pipeline juncture.

Before

After

After

Relining of Floor Section on Sizeable Outlet Duct

One of Corrocoat USA's longest-standing clients; a 1.2 Giggawatt coal fired power plant in North Florida, required relining of a large section of the floor of a 35-year-old outlet duct* with a total surface area of 2,200 ft².

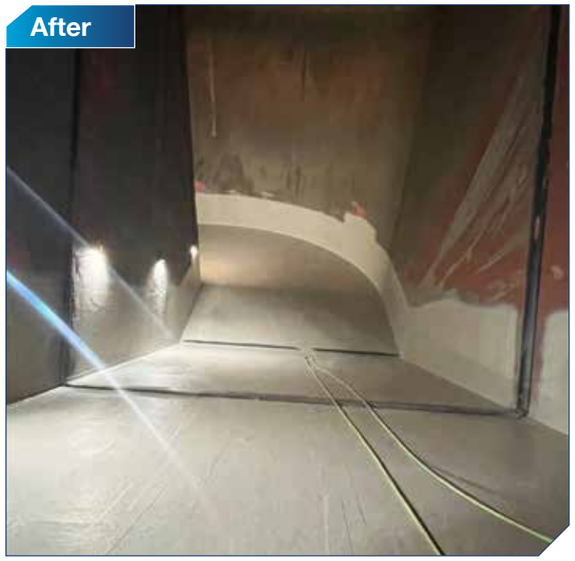
The outlet duct at the plant was of a considerable size, and sitting 120 feet (36.6 meters) off the ground. The 450 feet (137 meter) long structure graduated from 12.5 feet (3.8 meters) diameter on one end out to 14 feet (4.3 meter) x 25 foot tall (7.6 meter) on the end, feeding into the stack. Corrocoat had 18 consecutive days to complete the project during the plant's 28-day unit outage, coordinating with other contractors and outage related scopes of work, during the short span of time.

As soon as the unit went down and adequate time was allowed for cool down and certification for confined space entry, plant personnel utilized fire hoses to clean out the duct. Next, Corrocoat USA inspectors accompanied the owner's 3rd party NACE Certified inspector to identify areas of the existing outlet duct lining that needed replacing. In addition to +/- 300 square feet (28 square meters) of spot repairs, the owner's inspector decided to task Corrocoat USA with blasting and relining 100 lineal feet (32 meters) of the floor, plus 4 feet (1.2 meters) up the side walls, including the portion of the floor that includes a 45-degree slope.

In order to safely access the incline for blasting, Corrocoat's site application team utilized their skills to build a mobile ladder, allowing for blasters to gain a solid foothold while blasting.

After the blasting process, the team removed the grit from the surface to conduct a weld inspection. The blasting uncovered several areas in need of weld repairs. Following the welding repairs, the weld areas underwent re-blasting before the grit was thoroughly cleaned out of the duct. The surface was then primed with a holding primer - Polyglass PPA.

Finally, the surface was laminated with 1.5 oz chopped strand fiberglass mat using Corroglass L600 series, followed by application of Polyglass VEF at 40 mils (1,000 microns) dft. Based on previous experience in this service environment, Corrocoat expects the new liner to last more than 30 years. The team completed the project 2 days ahead of schedule.



*A wet flue gas desulfurization (FGD) outlet duct in a power plant is a crucial component of the flue gas desulfurization system. It's responsible for carrying treated flue gas from the wet FGD system to the atmosphere. Flue gas desulfurization is a process used to eliminate sulfur dioxide (SO2) from exhaust gases, primarily in coal-fired power plants.

In a wet FGD system, the outlet duct directs flue gas, treated through absorption or chemical processes, out of the system. The term "wet" indicates the use of a liquid, typically an alkaline slurry, to absorb and react with sulfur dioxide in the flue gas.

The wet FGD outlet duct must be designed to handle specific conditions, including temperature, pressure, moisture, and corrosive elements present in the treated flue gas. Its material and construction must withstand these conditions to ensure …ensure the reliable and efficient operation of the FGD system.

Overall, the wet FGD outlet duct is a critical component in the emission control system of a power plant, helping to reduce the environmental impact of the plant by removing harmful pollutants from the flue gas before it is released into the atmosphere.

Equipment Protection at Power Station following State of Emergency

Historically, all cities in the Republic of Kazakhstan have had centrally supplied heating systems. After the forced outage at the Ekibazstuz combined heat and power station in January 2023, largely blamed on outdated, worn-out infrastructure in dire need of renovation, the city declared a state of emergency. A number of local residents were disconnected from the city's central heating system for months, amid temperatures ranging from -20°C to -30°C.

Before

The government placed great emphasis on power plant infrastructure, allocating funds for repair and modernisation to ensure that the 2023-2024 heating season would pass without incident.

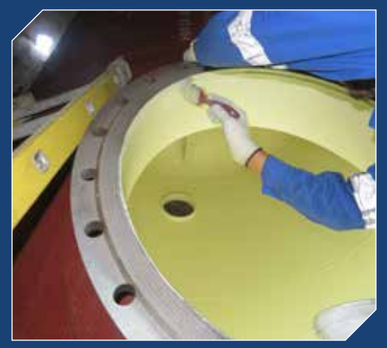
Following the outstanding reputation of Corrocoat Caspian for protecting industrial equipment and positive testimonials from long-standing clients, Pavlodar power station, the management of a power station in the city of Arkalyk (North Kazakhstan), commissioned Corrocoat Caspian to provide internal lining for 4 exchange filters, as well as a sodium cation filter, oil storage, salt solution, and mixer tanks.

All of the equipment was in poor condition, operating in a service environment with water and various chemicals at temperatures exceeding 50°C. Due to the absence of any corrosion protection over the years, they had heavily corroded equipment, resulting in thinning of the steel. Replacing the old equipment was not a viable option due to time and cost implications.

The Corrocoat Caspian team carried out the repair process on-site at the power station, removing surface contamination and abrasive blasting the surface of the equipment prior to coating application. Corroglass 600 series was applied manually on seams and heavily corroded areas, followed by Polyglass VEF, which was applied via spray application.

The mayor of the city personally supervised the work process and requested the team to protect additional equipment (a mixer tank and 2 ion exchange filters) throughout the project. Additional Corrocoat Caspian team members (from the manufacturing and service divisions) were brought onto the project, with day and night shifts implemented to complete the work and protect the equipment before the season started.

After



Sub-contracting for World Leader Solutions Providing Total Solutions

A world leader in the provision of solutions for offshore, marine and energy industries, recently sub-contracted our partners in Singapore, to repair numerous pieces of equipment, as part of their comprehensive repair and upgrade for a marine vessel.

Main condenser scoop pipe for sea water intake

Water was leaking from the condenser tube hole while coating application was applied. The affected coating area needed to me cleaned and allowed to dry before a new layer was reapplied.

The team got to work replacing the existing rubber lining on a main condenser scoop pipe (Port 1800mm dia x 4100mmL / Stbd 1800mm dia x 10 meter) for sea-water intake and a sea chest strainer (Housing – 1250mm dia x 1500mmH x 2 BR 1000mm dia x 500mmL), with our Polyglass Standard. It took the team 3 full days (including 2 overnight shifts), to complete the work on the pipe, and 3 days for the strainer.

Another project undertaken, was the mechanical repair and application of a protective coating on a marine growth preventive system (MGPS Housing – 1000mm dia x 1600mm Cover – 1200mm dia) tank. Polyglass Standard was once again the coating system selected, as it performs exceptionally in immersion environments, including marine and aqueous.

Seachest strainers

Marine growth preventive system

Refurbishment & Coating of Impeller with Heavy Erosion & Pitting to the Offshore, Marine and Energy Industries.

A client at a thermal power plant in South Eastern India required refurbishment and coating of an impeller with heavy erosion and pitting.

At this particular plant, seawater serves as the circulating water through vertical turbine pumps, equipped with Super Duplex SS Impellers. Following 12 years in operation, the impellers started to experience heavy pitting, which ultimately lead to performance issues in the pumps. With a proven and reputable track record in reinstating pitted pumps and impellers for the client in the past, our partners in India, Kirloskar Corrocoat Pvt Ltd. (KCPL), were contacted to provide their expertise.

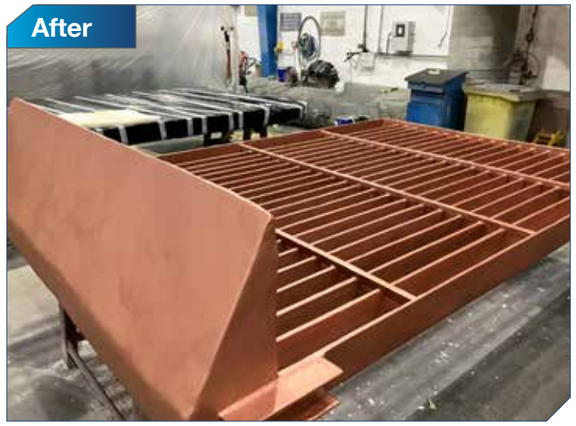
Not only did KCPL's specialised pump refurbishment and coating technology provide an effective and efficient solution, ensuring an extended lifespan, improved performance and significant cost savings with a very short lead time, they also ensured that the material of construction (MOC) and pump performance remained uncompromised.

Before

After

UK Showcase

Coarse Water Screens 2024 - Biofoul Nuclear Power



Ducting - Energy from Waste

Externals (SEW) - Gear Boxes

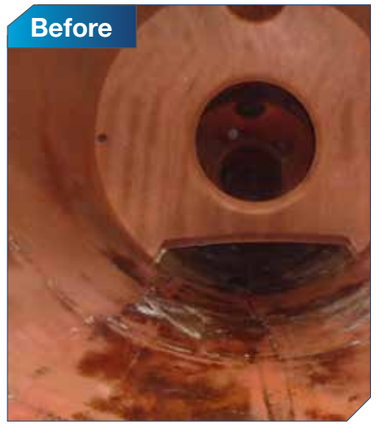
Column Pipe Refurbishment for Major Oil Company in the North Sea

Cracked Pipe Refurbishment for Major Oil Company in the North Sea

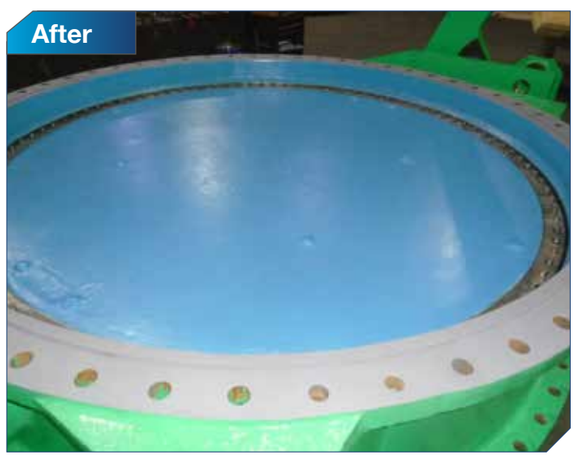
Impellers - Waste Water

UK Showcase

Hazardous Chemical Road Tanker Refurbishment



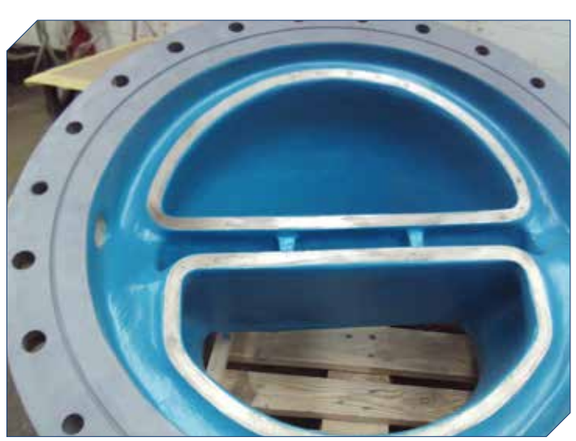
96Inch Diameter BF Valve for Major Nuclear Power Plant



Six 56Inc - BF Valves for Major Nuclear Power Plant

Pump Parts for the Water Industry

Valves for the Water Industry



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/Corrocoat-limited @Corrocoat

Call for Entries: Share Your Triumphs!

Calling all partners! To celebrate Corrocoat's 50th birthday, we'll be putting together a special edition of UPDATE, and we want to hear your stories. Showcase your achievements, whether it's pioneering innovations, stellar leadership or sustainable practices, we want to hear your success stories.

Submit your entry by 1st August to inspire others and gain global recognition. Don't miss this chance to shine! Submit entries to **marketing@corrocoat.com.**

New Appointment

In March we welcomed Valdomiro Lourenco MEng as our new Sales Manager for the South of England. With a Master degree in Mechanical Engineering and Business Administration, he brings a wealth of skills in both technical and business backgrounds.

Prior to starting at Corroserve he worked for 25 years for a major component supplier in a variety of geographies and roles. Valdomiro also worked as a Resident Sales & Application Engineer at Jaguar Land Rover and Ford UK. We wish him the best of luck and look forward to working with him.

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