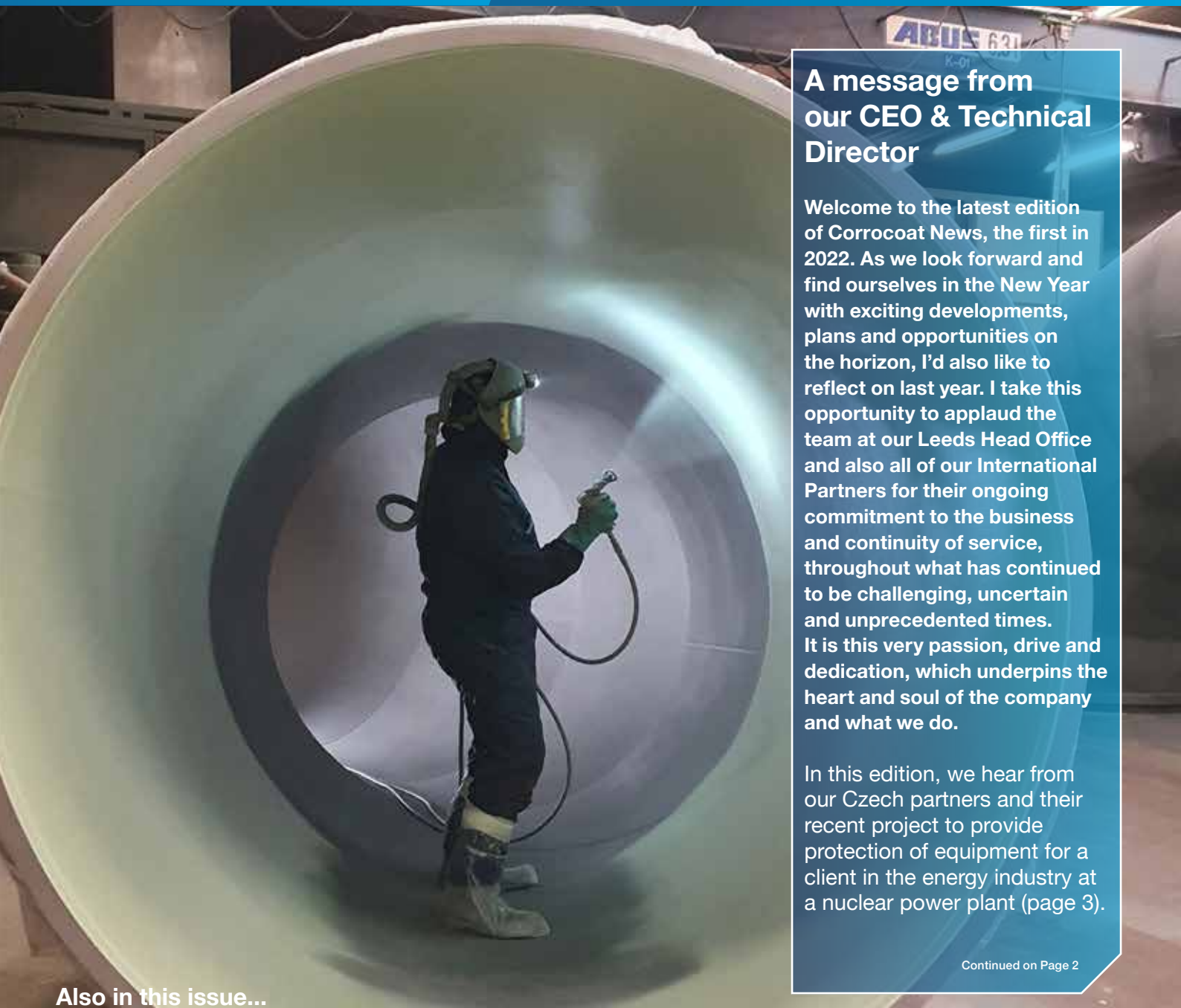
February 2022

CORROCOAT news



A message from our CEO & Technical Director

Welcome to the latest edition of Corrocoat News, the first in 2022. As we look forward and find ourselves in the New Year with exciting developments, plans and opportunities on the horizon, I'd also like to reflect on last year. I take this opportunity to applaud the team at our Leeds Head Office and also all of our International Partners for their ongoing commitment to the business and continuity of service, throughout what has continued to be challenging, uncertain and unprecedented times.
It is this very passion, drive and dedication, which underpins the heart and soul of the company and what we do.

In this edition, we hear from our Czech partners and their recent project to provide protection of equipment for a client in the energy industry at a nuclear power plant (page 3).

Continued on Page 2

Also in this issue...

Front cover image supplied courtesy of Corrocoat Benelux

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We also share a story for a project carried out by the team in the UK, using Biofoul to provide protection on two jetty intake screens for a leading energy company (page 5). Corrocoat Benelux shed light on how they overcame a logistical challenge coating an enormous compressor-housing unit (page 4), whilst Corrocoat Japan showcase energy saving solutions for cooling tower pumps over on page 6.

We continue to work on projects to restore and repair equipment and machinery, which has been damaged due to substandard work, carried out by previous contractors. Our partners in the US recently experienced this and showcase how they provided a solution (also on page 6), whilst on page 4, Al-Sabaiea, our Kuwaiti partners provided extensive internal repair on a road tanker, which required additional work following a visual inspection.

All of this and more to explore in our first newsletter of the year. Please enjoy and here is to a great and prosperous New Year ahead for all.

Charles J Watkinson
CEO and Technical Director

Product Showcase

Di-Shield

Di-shield is a polyester co-polymer mixed with glassflake and other fillers to give good dielectric properties. Di-shield will cure at low temperatures, has excellent adhesion and is able to withstand the high pH generated in the vicinity, of impressed current anodes. Di-shield will continue to cure under water once applied, it requires no primer and is of buttery consistency to prevent slumping, whilst allowing ease of application at the required thickness.

This material was developed specifically to provide a dielectric shield around impressed current anodes, for example on ships or other subsea structures where in the vicinity of the anodes you could have an increased current density/potential if there was any damage to the coating in the vicinity of the anode. This is essentially to reduce the risk of cathodic disbondment in those areas, in a similar way to a cathodic disbondment test environment.

Cathodic Disbondment and Testing

Metal substrates are sometimes protected from corrosion using Impressed current or sacrificial anodes. Cathodic disbondment is disbondment or delamination at a damage site, caused by the passage of the resultant voltage. Water is electrolysed to form hydroxyl ions at the substrate and on some coatings significant delamination can occur.

Cathodic disbondment testing can be assessed in the laboratory, most commonly by applying a known voltage across a plate with an artificial defect, for a specified test period. There are various test methods used. The resistance of coatings to disbondment is a key factor in many applications and the ability to resist this effect, is closely related to the immersed adhesive strength and the permeation resistance of the lining. Corrocoat's glassflake filled linings have demonstrated excellent resistance to cathodic disbondment.

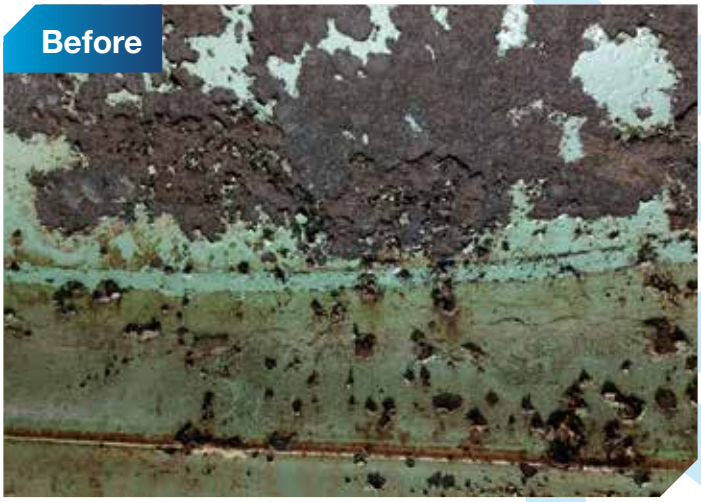
Protection of Equipment for Nuclear Energy

Our Czech partners, Corrotech, recently provided corrosion protection of the internal parts of two 2 x 12m² fire foam tanks, for a client in the Energy Industry at a Nuclear Power Plant.

The tanks stored a fire foam concentrate which had caused damage to the existing internal lining resulting in pitting corrosion. The Corrotech team carried out the work in-situ at the Nuclear Power Station and began by removing all of the existing deposits & paint before decontaminating the surface from soluble salts.

Following abrasive blasting, the team discovered a number of sharp edges and poor quality welds, which needed to be mechanically repaired ahead of the coating system being applied.

The coating selected for this job was Corrocoat Zip E, an epoxy glassflake coating offering durable protection in aggressive service conditions – ideal for the long term protection of the internal substrates of these fire foam tanks.



Overcoming a logistical challenge whilst protecting an Enormous Compressor Housing Unit

Our partners in the Netherlands, Corrocoat Benelux, recently won a contract with a multinational company that provides mission-critical flow creation products and industrial solutions, to provide corrosion protection of a compressor housing unit from the automotive industry.

Following 8 years in service, the epoxy coating in the internal cooling water area became detached, causing a leakage in the cooling water area of the air section. Unbeknown to the team, the housing unit weighed an enormous 13 ton and upon arrival to the workshop presented a logistical challenge getting the unit offloaded and ready to begin the repair work. The overhead crane onsite was only capable of lifting 6 ton, so the team arranged for a mobile crane to move the housing unit. With a tight schedule of just two weeks given to complete the work, the coating team didn't disappoint, working around the clock to ensure that the job was completed to the client's satisfaction.

The team sandblasted the housing internal and external before applying the Corroglass 600 series internally, with the externals being coated with Plasmet ZF and a top coat of AP1.

Cooling water area before protective coating

Cooling water area following protective coating

Road Tanker Internal Repair

Al-Sabaiea, our partners in Kuwait recently worked on a project to restore and protect a tanker for a client operating in the oil and gas industry. The tanker was used to mix and transport strong Hydrochloric acid for upstream oilfield services, to and from site.

The previous coating on the tank had suffered chemical attack and upon visual inspection, the team discovered that the internal pipes and body of the tank had started to severely corrode. One of the internal pipes had multiple holes causing leakage, which meant it was no longer functional.

The team used a composite repair technique utilising quadraxial laminating cloth 610g/m2 over the external of the pipe, wetted out with Corroglass L600 laminating resin to restore the damage. Corrofill VE was then used to level the surface of the pipe back to its original thickness. Corrofill was also used to restore some of the other pipes in the tanker (which were still in a good working order and required little repair), back to their original condition.

After the pipes were restored, the team used Polyglass VEF to provide corrosion protection for the rest of tanker and Polyglass VE veilcoat to finish.

Biofoul Protection for the Energy Industry

A leading energy company in the UK recently required refurbishment of two jetty intake screens. The screens had been in service for approximately 12 years and had suffered mechanical damage. The client had also welded on new lifting points which required protection and coating repair. They had previously needed to take out the screens and manually remove the marine growth which restricted the water flow into the cooling water system, reducing the efficiency of the condenser, which could impact the power generated from the station.

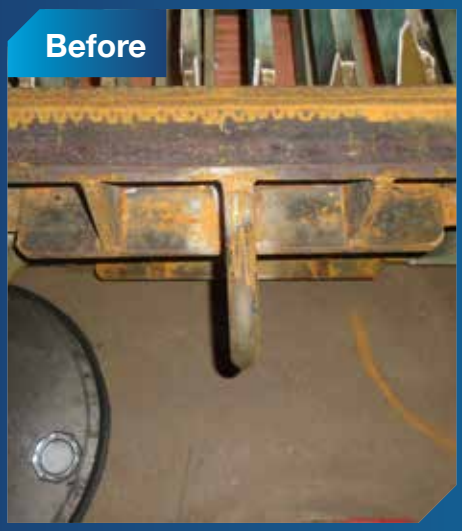
Upon arrival to the workshop the screens were flash blasted to reveal the true extent of the damage and in turn the repair required.

Surface preparation then followed on the carbon steel substrate and on the new lifting lug area. Following cleaning to prepare the surface ahead of coating, Corroglass 600 Series was then used to achieve a minimum DFT of 900 microns, with the appropriate thickness and spark tests being completed following adequate cure.

Biofoul was applied via airless spray, as a topcoat to achieve a minimum DFT of 300 microns. Biofoul was selected as it has excellent long term fouling resistance and will resist flow velocities of up to 25m/s. The coating contains metallic copper and no fillers which are classified as toxic, such as TBT and some copper salt materials.

It has been tested and found to be non-toxic in salt and fresh water and is certified as TBT free by Lloyds Register.

Before



After

Energy Saving Solution for Cooling Tower Pump

Corrocoat Japan worked with a client in the Chemical Industry to assist them with saving energy by targeting the double suction pump of a cooling tower pump, which had been in service since 1986. The pump had long operating times and relatively large power loads and the aim of the project was to carry out maintenance to improve the overall energy efficiency.

Firstly, the team carried out an initial pump assessment with specialist monitoring equipment to check the pump's current performance. The results would later be compared to the performance measurement of the pump following coating, in order to verify the energy saving merit following the work carried out.

The pump was disassembled and any worn or defective parts were repaired or replaced. The internals were then coated with Fluiglide and the externals with Corroglass 200.

The repaired pump was once again monitored to verify its performance and energy saving merit after re-installation on-site, following the anti-corrosion treatment/completion of work.

The team confirmed an impressive energy saving value of 9.2%, which was the equivalent to 35.16 kw/h, significant to 281,280 kWh/year. A fantastic result leading to a reduction in operating costs and the large power consumption for the client, alongside the necessity of recovering the original pump efficiency to improve the overall cooling performance system.

Roof Refurbishment of Resin Plant Process Water Treatment Tank

The externals of a large process tank at a resin plant was previously blasted and coated by a competitor in the US.

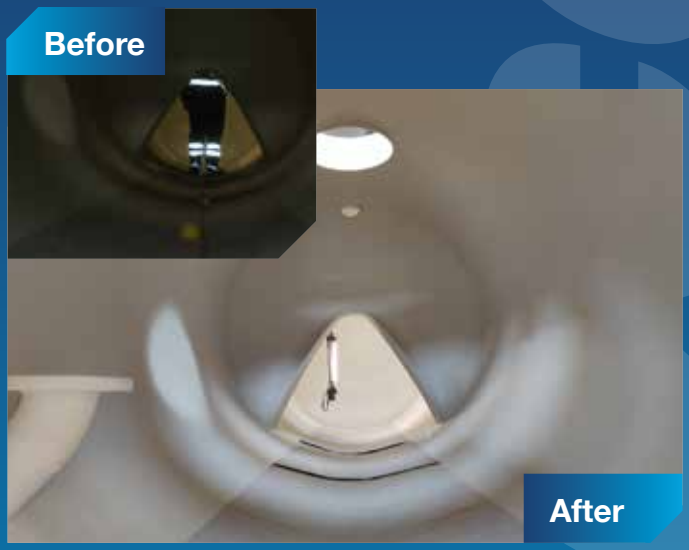
Three months after completion, the client found that the contractor had blasted hundreds of holes in the roof of the tank and had coated over them. This allowed rainwater to contaminate the contents of the tank. When confronted, the contractor advised that their scope of work did not include filling holes. In desperate need of a solution, the client turned to Corrocoat USA.

The team in the US vapour blasted the existing coating to achieve a commercial blast consistent with SSPC SP6.

The surface was then primed with Plasmet ZF (red) ahead of using Epoxy Laminating Resin and quadriaxial fiberglass mat to laminate a composite fiberglass layer across the entire tank roof. The team then chose a suitable polyurethane topcoat to offer UV protection in a colour that matched the remainder of the tank. The client was extremely impressed with the final result and the quality assurance and will continue to work with Corrocoat US on future projects.

Polyglass Treatment for Stainless Steel Tanker

Corrocoat UK have recently worked with a company specialising in hazardous liquid tankers to provide corrosion protection of their new stainless steel vacuum tanker, which would be used to transport various acidic waste streams throughout the UK.



The tank was 7.5m long with a diameter of 1.91m. Access was provided through two off 600mm tank top manways and another at the bottom of the rear dish. The tank would be collecting acidic liquids, with the possibility of weak solvents, all at ambient temperatures. With this in mind, Polyglass VEF was the coating system selected for the job. Polyglass VEF is specifically designed to offer the corrosion in aggressive chemical environments and has a proven track record with road tankers

The first coat of Polyglass VEF was applied by airless spray to a minimum WFT (Wet Film Thickness) of 600 microns. As part of a comprehensive corrosion protection coating system, fibreglass woven matting was applied to the interface areas of the tank and the bottom 1/3rd of the shell below the manway access points, i.e. baffle joints and manway neck joints. These reinforced layers improved the tensile properties of the coating and cracking resistance due to movement.

Following a second coat of Polyglass VEF to a specified minimum DFT of 1200 microns, thickness checks, spark testing and a 100% visual inspection was completed. A final topcoat of Polyglass VE Veilcoat was then applied. On completion of the application, the coating was post cured at 60–80°C for 8 hours to ensure the full cure offered resistance required against the waste streams being collected.

Protection for Equipment Destined for European Salt Plant

Our partners at Corrocoat Benelux won a contact with a client specialising in the construction industry to coat ten new large bore pipes and four cooling water tanks, including the tank inserts.

The equipment was destined for a large salt plant in Europe, where the pipes would be used to transport brine and the tanks would be used to store cooling water. The internals of the pipe pieces and tanks were coated with Polyglass VEF at a minimum thickness of 1200µm and a general paint system at a thickness of 340-400µm was used for the externals.

Due to the large size of the pipe pieces and tanks, overhead cranes, a forklift truck and a lorry were used to transport the equipment throughout the workshop for the work to be carried out, whilst a pipe sprayer was used to apply the coating on the inside of pipes and ensure an even layer of coating.

The whole project was carried out within the requested delivery time to the full satisfaction of the customer. Throughout the process, various steps were witnessed by an independent NACE surveyor, hired by Corroocat Benelux to reassure the client that all of their requirements had been met.

ISO 45001 Certification

We are extremely proud to announce that we recently received our ISO 45001 certification. We have always been passionate about maintaining safe and healthy working conditions, equipment and systems for all of our team and this new certification pays further testament to that.

The ISO 45001 Occupational health and safety management systems – Requirements with guidance for use, is the world's first International Standard for occupational health and safety (OH&S). It provides a framework to ensure we have the most up-to-date global standard for occupational health and safety, reducing workplace risks and enhancing health and well-being and OH&S in the workplace. It also demonstrates that we are performing strong due diligence in managing and protecting our employees.

By implementing the most up-to-date occupational health and safety standard, we are ensuring our organisation continues to operate in line with best practice, having a strong consistent standard and enabling us to operate more efficiently across the board. It also demonstrates that we are actively facilitating continuous improvement to our employees' morale, safety and performance and accountable for our staff's wellbeing.

Send us Your Stories!

Tell us what you have been up to!

We really want to hear about your case studies, stories, work – basically any projects or news you would like to share and allows us to shout about to a worldwide audience. Your stories could be featured on our social media channels, on the official company website, in media publications both national and international as well as the Corrocoat Newsletters.

All we need is:

A write up/explanation of key projects/work you have carried out:

- What work has been carried out?
- Where the work took place?
- Any other important/useful or interesting information.
- Supporting high-res images.

Please get in touch to submit any content or discuss details further with Nadia at nadiab@corrocoat.com

For all the latest news, events and updates join us on LinkedIn.

Corrocoat – Leading the Field

Since 1974, **Corrocoat** has led the way in anti-corrosion coatings. Our products have helped protect all kinds of industrial giants – some of the biggest names operating in power generation, oil and gas and petrochemical industries – from the harmful effects of corrosion.

At **Corrocoat**, we save our customers from expensive replacement costs. From traditional paints that repair and maintain, to unique glass flake coatings which excel in advanced corrosion protection.

Whatever the industrial sector, and whatever the application, we have a bespoke product and a specific set of skills to help. With a blend of high-grade solutions and highly-technical expertise, we're proud to provide corrosion engineering and long-term corrosion protection to all.

Corrocoat News is produced by CORROCOAT

Corrocoat, Forster Street, Leeds LS10 1PW England
Telephone: +44 (0) 113 276 0760
Fax: +44 (0) 113 276 0700 e-mail: info@corrocoat.com