

# CORROCOAT

# news

May 2022

## A Message from our Managing Director

Welcome to the latest edition of Corrocoat News where we will once again be highlighting exactly why we are the best at what we do. With case studies from our partners in the Netherlands, Czech Republic, Japan, Kuwait, Singapore and the US, we showcase why our products and services are renowned across the globe, and how we deliver excellent results and value for money. From corrosion protection for leading innovators in wind turbines (page 3), to new pipes (page 4), flue gas desulfurization units (page 4) and eroded pumps (page 5), we'll showcase the breadth of industry we operate in and the services we offer.

With record increases in energy costs across the globe, technologies and solutions to help reduce energy consumption and increase efficiency are at the top of the list for many clients. Friction reducing energy efficient protective coating systems are now more important than ever, and Fluiglides, featured in our product showcase on page 2, is the ultimate solution for pumps.

As we all know, our fantastic products are only part of what we offer. In addition to providing corrosion protection and engineering services both on and off site, we also have our onsite research and development division, Corrolabs, equipped with advance testing and analytical equipment. Head over to page 9, to see the exceptional results of some recent testing we carried out for Polyglass VE, on the internals of a Pipespool.

Continued on Page 2

This issue includes...



In this edition, we also say farewell to Nigel Riley, our Works Director at Corrocoat UK, as he approaches his retirement, August 2022. Nigel has been with the company for almost 33 years, playing a key role in the engineering and operations management and strengthening the team in recent years. Find out more and join us in wishing Nigel all the best, on page 10.

As well as the amazing case studies demonstrating the incredible work and projects which are being undertaken at Corrocoat on a global scale, we'll also be taking a closer look at our operations around the world as part of a new 'Global Partner Profile' feature. In this issue we highlight Corrocoat USA, where we meet the team, learn of recent promotions, projects, key industry sectors and more. Head over to page 6, 7 and 8 to find out more.

As always, with exciting projects and great prospects, we delve deeper in to new and emerging areas of industry across the globe. Here's to delivering industry leading corrosion engineering and long term protection to all.



**Graham Greenwood-Sole**  
Managing Director

## Product Showcase

# Fluiglode

### Friction reducing energy efficient protective coating systems.

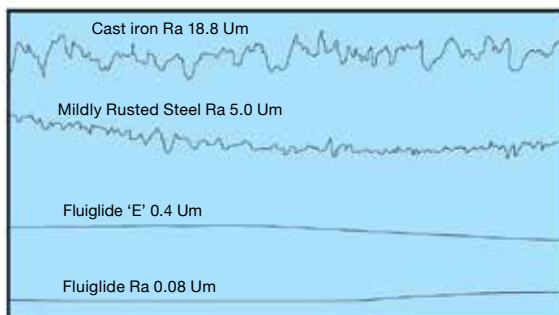
With record increases in energy costs across the globe, technologies and solutions to help reduce energy consumption and increase efficiency are now more prevalent than ever.

Increased concern relating to the more effective use of energy resources has resulted in the introduction of new technology in coating materials. This is aimed at maximising the performance of pumping systems used in areas including power generation cooling water systems, the process industries and water and waste treatment.

Our Fluiglode system, first introduced in 1985 has now been applied to literally

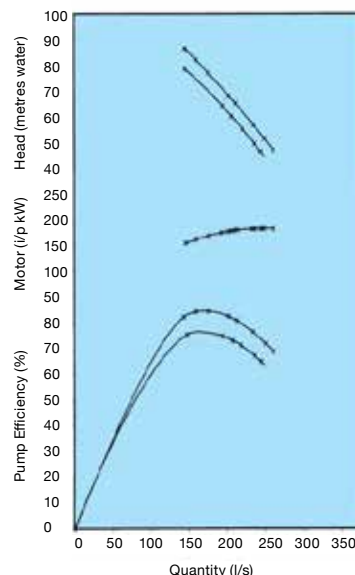
thousands of pumps worldwide, achieving in every case significant improvements in efficiency. The performance of the process has been subject of extensive test procedures, including evaluation by major manufacturers, utilities and industrial users.

Fluiglode materials offer dual benefits. The system not only achieves notable increases in overall efficiency levels, but also provides an effective corrosion barrier, preventing early fall-off in performance due to nodular growth and surface corrosion.



Roughness Amplitude of selected Surfaces ▲

Typical test curves showing improvement in efficiency after overhaul and treatment with the Fluiglode system ►



The established performance of the Fluiglode system worldwide places Corrocoat in a dominant position in this demanding and competitive field. We have had the opportunity to test and evaluate pumps which have been running, using Fluiglode systems for longer than any other company active in this field.

Corrocoat also offers special abrasion resistant variants of the Fluiglode system, for use where the solids burden is high and abrasive.

### Pump Running Costs: A Perspective View

Over an expected life span of 20 years, only 2.5-3% of the cost of pump operation relates to the purchase price of equipment, with a further 2-2.5% attributable to maintenance costs. The remaining 95% is consumed in the cost of the power to run the unit.

With the ever increasing cost of energy over the life of a pump running continuously, the potential savings from the average 4-5% improvement offered by the Fluiglode system offers a fast payback on the initial coating costs.

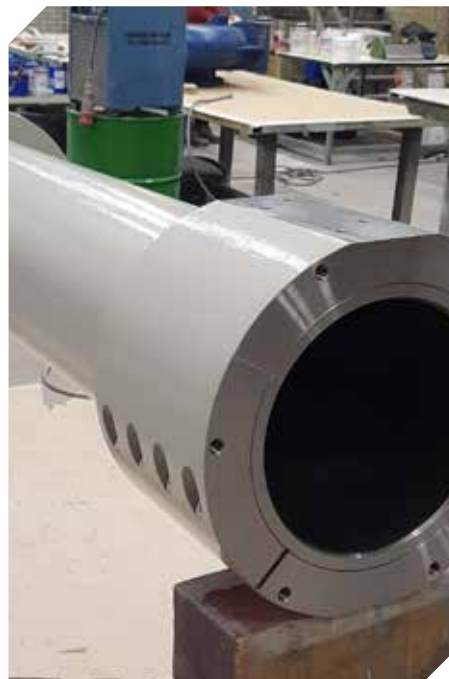


# Flower Power Protection

**A leading innovator in wind turbines, based in the US and the Netherlands, has installations across Rotterdam, Amsterdam, parts of Germany, Israel and Colombia. The company produce efficient advanced aerodynamic tulip shaped wind turbines, which aim to deliver wind energy for everyone and make small windfarms a leading player in the green energy industry, with no environmental degradation.**

Following great success, the company started developing larger wind turbines and our partners in the Netherlands, Corrocoat Benelux, recently received the first parts to provide corrosion protection for a wind turbine which would reside in a coastal environment, at The Maasvlakte; a massive man-made westward extension of the Europoort and industrial facility within the Port of Rotterdam. With a total length of 6 meters, the turbine required a protective coating, which needed to be resistant to all weather conditions, especially salty sea wind.

The team blasted the parts, before applying an adhesive layer of Plasmert ZF and finishing with a top layer of Plasmert Corrothane AP1; a high performance, 2-pack, solvent borne, isocyanate-free polyurethane/ acrylic top coat used primarily over the top of other Corrocoat epoxy based coatings to give colour retention and weathering properties. It is designed for use on new construction and maintenance work on marine and offshore structural work, offering excellent protection in aggressive atmospheric service environments.

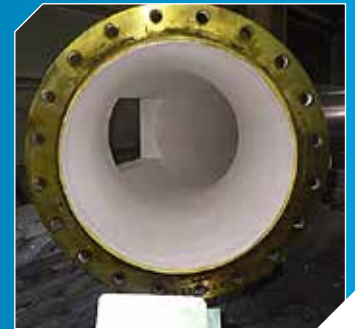




## Extending Life Span of Chlorine Gas Piping

Corrocoat Japan were previously contacted by a client, to provide a suitable coating for the internals of a pipe, which would operate in a chlorine gas atmosphere at 200°C. Due to the high cost of metals suitable for this environment, a lining system was preferred and offered by Corrocoat Japan. Following a successful 1 year trial in operation, the client provided 2 more pipes to be lined by Corrocoat Japan.

The team selected Corrothane XT; a three-pack cold cured vinyl ester-urethane polymer alloy with glassflake, to protect the pipes. Corrothane XT offers excellent heat and chemical resistance (of 160°C in a liquid environment), as well as protection in an atmospheric environment (up to 260°C). The coating system has been widely adopted as a countermeasure in high temperature and high corrosion environments. The team predict the coating performance will still be in good working condition for more than 5 years in this environment.



## Protection of New Build Flue Gas Desulfurization Units

Corrotech, our Czech partners, recently worked on a project to provide corrosion protection for the internals of two new 450m<sup>2</sup> carbon steel flue gas desulfurization units at a coal power plant, for a leading provider of innovative technology and solutions for the energy sector.

Although new, numerous substrate defects were detected on the internal surfaces following abrasive blasting to cleanliness Sa2, which were immediately repaired ahead of a second round of blasting to Sa2 1/2. Due to the size of each unit and the complexity of working around multiple connections, openings, manholes and beams, the internals were split in to 9 application phases, with each phase treated separately and then connected to the next phase.

Each phase was primed with Polyglass PPA/PPV before the application of Polyglass VEF as a corrosion barrier. All corners were rounded off to a 6mm minimum radius by Corrofill VE to relieve stress areas before lamination commenced with LR600 and multi-axial cloth 600g/m<sup>2</sup>. Six layers were applied in total with Polyglass VEF WR being applied as an abrasion barrier and completing the final stage of the coating process.

The team exercised excellent planning and execution, reaching maximum overcoating between each layer and completing the project within the agreed timescale.

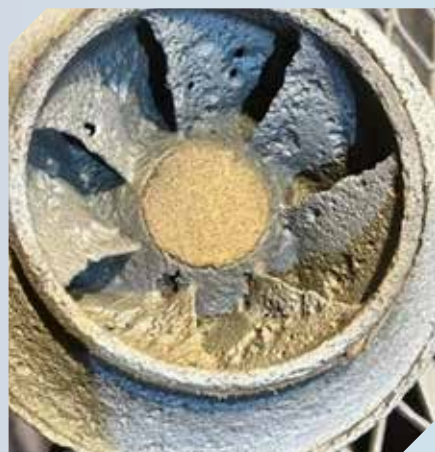




# Protection for corroded SW Impeller

**BHM Engg Services PTE Ltd are our exclusive distributors and specialist applicators in Singapore.**

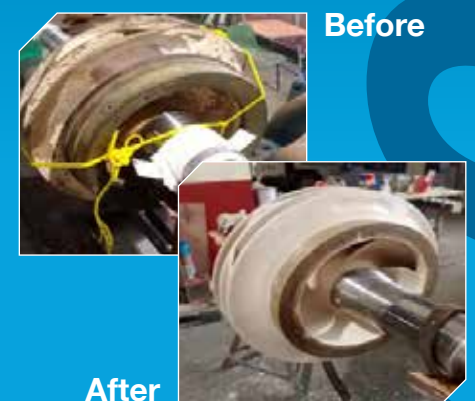
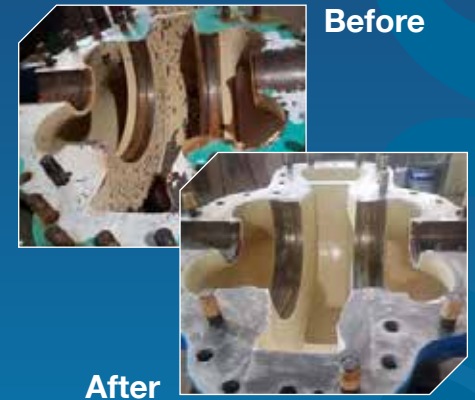
They have recently undertaken several projects working on the refurbishment and restoration of pumps for a couple of clients in the marine industry, who chose to save costs substantially by repairing their pumps with composite material, as opposed to replacing them with the purchase of entirely new equipment. All work was carried out in the workshop by brush application, using Polyglass Standard; a two pack cold cured polyester/acrylic co-polymer enhanced with glassflake.



# Polyglass VE for split pump refurbishment

**A client operating in the process industry previously had a pump coated by another supplier, which had suffered chemical attack as a result of corrosion.**

The pump unit was refurbished and coated with Polyglass VE: A cold cured glass flake vinyl ester acrylic co-polymer, which offers superior resistance to chemical attack from equipment used in an immersed environment.





# CORROCOAT USA

Key Facts: **In operation since 2008** **Based in Florida** **General Manager – Josh Tankersley** **Team size: 20**

## Meet the Team

### General Manager Josh Tankersley

Josh joined Corrocoat USA in July, 2010 as a Sales Engineer. Most of his previous work experience was in estimating and project management for the commercial construction industry. At that point, the company was just two years old and it had been less than a year since the company had seen a change in management. There were just 6 employees at Corrocoat USA at the time.

In March of 2012, Josh was promoted to General Manager. Since then, the company has grown significantly. At present, the annual revenue is 5 - 6 times what it was in 2012. Corrocoat USA continues to expand its customer base by tireless selling, executing some very difficult and challenging projects and a 'do what it takes' passion and mentality from its 20+ team.



### Operations Manager Curtis Dexter

Curtis joined Corrocoat USA 3 years ago, as the Operations Manager. Most of his previous experience was in the sales and maintenance of heavy-duty industrial cranes. Almost immediately, Curtis' high industrial IQ, existing knowledge base and determination, positively affected the safety program, facilities improvement initiatives and on site project management goals.

Curtis is directly responsible for resource and facility management, as well as oversight responsibility on all coating applications projects and human resources management for the applications teams.



### Senior Superintendent Ken Conklin

Ken has been with the company for 5 years. Starting as a trainee apprentice, Ken quickly rose through the ranks to superintendent as the result of excellent workmanship, leadership ability and product knowledge. Ken has lead Corrocoat USA teams in Mexico, working in a Demister at a steel plant, as well as offshore work in Trinidad and Tobago. He is currently the Senior Superintendent

at a major power plant, supervising 8-15 Corrocoat staff on annual turnkey maintenance projects.





## Key Industry Areas

Currently, a key area of industry for which Corrocoat USA deliver their services is on-site corrosion protection and mitigation in the Power Generation industry; working to internally line components of FGD systems, Cooling Water Systems and balance of plant maintenance and corrosion mitigation.

They also work on site to protect the various aspects of a handful of pulp and paper plants, petrochemical plants, which process

the by-products from the pulp and paper plants, performing tank linings and concrete refurbishment.

In the workshop, over the past few years, they have internally lined pumps used at NASA and small tanks and vessels imported from around the US. They have also worked on a multitude of produced water pipes from Louisiana that have been shipped out to several oil and gas platforms in the Gulf of Mexico, following corrosion protection.

Left to right:  
Ken Conklin,  
Leonard Wright,  
Xavier Coleman,  
Ebay Murray,  
  
Ibe Murray,  
Jay Bergeron,  
Billy Kirkland,  
Charles Nobsbisch



## Plans to Expand

As the operation in the USA continues to grow and news of the successful applications spread throughout heavy industry, Corrocoat USA plans to expand geographically from their location in Northeast Florida, west towards Louisiana and North into Georgia and the Carolinas. Within these emerging territories, they will seek to reproduce the same level of integrity, attention to detail and excellence that is integral to all Corrocoat operations across the globe.

The application team (aka "Engineering Team") consists of an extremely talented group of men, each bringing a variety of skilled and non-skilled labour ranging from carpentry and roofing to shipyard blasters and painters. Great effort is taken when recruiting team members and also to retain them and continue honing the best talent in the area/industry.

## Current Projects

In addition to the ongoing work as the resident coating contractor at a Power Plant, the team are also working on a surface tolerant painting project at a different power plant, lining produced water pipes

in the workshop and just finishing up on the concrete and steel corrosion mitigation and protection at a sulphuric acid building at a petrochemical plant (read case study on page 8).

## Recent Promotions

Congratulations to the following members of the US team for their recent promotions.



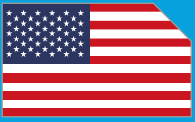
**Ryan Robertson** – Project Foreman to Superintendent



**Ibe Murray** – Journeyman to Project Foreman



**Josh Lyons** – Journeyman to Project Foreman



# Sulphuric Acid Building Corrosion Mitigation and Lining

Corrocoat USA was asked to perform a corrosion assessment for a client on a 2 year old, 4 story building that houses a sulphuric acid generator on a petrochemical plant. Due to incorrect material selection, the process piping leaked acid throughout the building causing significant deterioration to the galvanized structure and concrete on grade. The concrete was previously lined with a competitor's concrete coating designed for short-term exposure in secondary containments. Beneath the leaking areas and around the concrete were pitted with depths up to 4 inches deep.



Shortly after reviewing Corrocoat USA's corrosion assessment report, the client hired Corrocoat USA to supply and apply our Plasmert AR3 lining system, to refurbish the surface and protect against continual immersion. Some work was completed using pre-coated fiberglass sheets while the building was running, and then applied directly at a later stage to the prepared concrete, while the client addressed the root causes of their corrosion problems.

The surface was prepared using a wet abrasive blast unit combined with utilisation of a salt remover, followed by a high pH cleaning agent to alkalinize the surface. The concrete pH was then tested to ensure compliance to Corrocoat USA's own standards. Plasmert ECP (Epoxy Concrete Primer) was applied at 6 – 10 mils wft. Plasmert ECP penetrates into the concrete protecting subsequent coats from latent moisture, while fortifying the concrete at the surface.

Prior to installation of the new pumps in the building the 33ft x 2ft x 2ft' high pump bases were poured using Corrocoat's Epoxy Polymer Concrete

(EPC). The EPC cures to provide 20,000 psi compression strength and 1,800 psi tensile strength and can be coated the following day, saving time while increasing reliability.

Pits on the surface were filled with Corrocoat Zip E Screed, a glass flake reinforced epoxy coating, enhanced with a proprietary blend of fillers that allows for resurfacing to direct liquids towards the sump— an important aspect of the project for the customers' engineering team.

Once the screed was sufficiently hardened, Plasmert AR3 was applied at 48 – 60 mils dft (1200 – 1500 microns) in two to three coats, mixing in an aggregate for non-skid in the high traffic areas. As we have seen in many other applications, the Plasmert AR3 is unaffected in the presence of all concentrations of Sulphuric Acid – it was the ideal solution for this project.

\*Note that in one stage of the project, the team in the US had to leave the site for several weeks whilst the Corrocoat Zip E Screed was down in an area without the topcoat. During their absence, there were repeated releases

of the 40% sulphuric acid onto the Zip E Screed and the coating held up well, it was easily swept blasted and overcoated after being submerged for days.

On the galvanized steel, the team prepared the surface using a mixture of pressure washing with their 5,000 psi, 4.5 gallon per minute pressure washer in conjunction with the power tools, to prepare the portions of the steel that were showing signs of corrosion. They primed with Plasmert ZF and the nuts and bolts were stripe coated using the Corrofill E. The structure was then coated using the AR3, applied at 32 – 40 mils dft.

Josh Tankersley, Corrocoat USA General Manager said; *"On a project that required constant change of strategy due to variable safety considerations associated with evolving project priorities and coordination, I am very proud of our teams' ability to utilize Corrocoat materials to transform an otherwise 'snake bit' new building, into a sustainable asset that will support the customer's production efforts for many years to come."*





# Polyglass VE Pipegrade Test Spool

**Corrocoat UK, were recently awarded a contract to protect 300 new pipe spools of various dimensions by a multinational energy client. Corroglass 600 series was the coating system selected as it offered the best long-term corrosion protection on the FPSO.**

With pipe diameters between 50mm and 300mm, a number of coating strategies were employed including the in-house pipe-blasting and pipe-coating technology, piperolling and a carefully controlled flood and drain technique.

Used primarily on small bore pipes of complicated geometry, the flood and drain technique allows coating to be applied by trained technicians, into areas which would otherwise not be accessible. This technique has been successfully used for lining pipes with Corrocoat materials for over 40 years.

As part of the Q.A. requirements the end client requested that a pipe lined by flood and drain should be cut and assessed after coating, to show the excellent coverage which can be achieved using this application method.



A pipe containing two bends and a tee piece were supplied by the client for the assessment.

The internal surfaces of the pipe was first abrasive blasted and then coated with Polyglass VE Pipegrade using the flood and drain method. Application was carried out 4 times, allowing the coating to gel between coats and ensure that the coverage was sufficient.

The spool was allowed to cure for 7 days prior to being split along its length using an angle grinder.

Dry Film thickness readings were found to be a minimum of 1,260µm with an average of 1,436µm and a standard deviation of 135.63µm. Readings were taken every 150mm along the length of the pipe.

The pipe was spark tested at 17000 KV AC and no defects were found.

As you would expect there was a small amount of mechanical damage at the edge of the cuts, but away from these areas, the coating was found to be uniform and intact.

Adhesion was then tested in accordance with ASTM D4541. The surface of the coating and the adhesion dollies was abraded with P60 sandpaper. The test dollies were attached using the same batch of Polyglass VE Pipegrade (Batch 30) as the adhesive and then tested after 24hrs using a hydraulic adhesion test.

The results of the test were exceptional. The coated test spool had average adhesion value of greater than 20MPa, which was the limit for the test equipment.

Dolly 1 and 3 could not be removed from the surface, whilst the remaining dolly giving a value of exactly 20MPa.

Dolly	Adhesion value (Mpa)	Mode of failure
1	>20	No failure – unable to remove dolly
2	20	95% Failure of the adhesive, 5% cohesive failure of coating
3	>20	No failure – unable to remove dolly



**In conclusion, the coating thickness, integrity and adhesion was found to be excellent along the length of the spool piece, validating the method of application and as would be expected for this high performance lining.**

# Farewell to Our Works Director, Nigel Riley.

With a strong working knowledge and expertise in management and engineering, Nigel joined Corrocoat as the Engineering Foreman in 1990. Progressing to the Works Director in 2005, Nigel has made a huge impact and contribution, leading the site operations and engineering team to deliver outstanding results. Nigel has been instrumental in strengthening the engineering team in recent years, encouraging a culture of continuous development and performance improvements, through a number of progressive workplace initiatives. He also works closely with our Pumps Manager, Research and Development division and other areas of the business to ensure the service we offer continues to excel.

Nigel said: *"I'd like to take this opportunity to say it has been a privilege to be part of such a fantastic business. I wish the company and the wonderful team, both here in the UK and our partners overseas, the very best for the future and have no doubt, the business offering, service and reputation as world leading corrosion specialists will continue to thrive."*

Dan Briggs is currently working alongside Nigel, in his new role as Works Manager, to ensure a smooth transition in to the duties and responsibilities of managing and overseeing all areas of operations going forward. Dan has been part of the team here at Corrocoat UK for over 7 years, in technical sales and estimating. He has fantastic working and industry knowledge, and has built and sustained excellent working relationships throughout the company and with clients.

We'd like to take this opportunity to thank Nigel - wishing him all the best in his retirement, and also congratulate Dan on his new role.



## 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 allow 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](mailto:nadiab@corrocoat.com)**

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## 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.