



CORROCOAT NEWS

February 2020

A Royal Day Out – Naming of the RRS Sir David Attenborough



The RRS Sir David Attenborough, built by Cammell Laird for the British Antarctic Survey, is one of the world's most advanced polar research vessels. Corroserve was asked to provide corrosion protection against seawater for a large number of seawater pipes due to be installed on the ship.

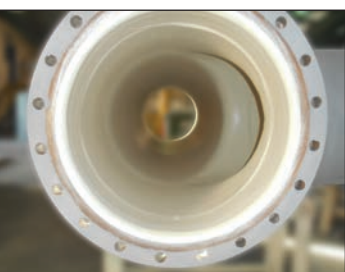
The pipespools and slip on flanges were delivered to the company's Leeds workshops where after suitable preparation Corroglass 600 was applied in multiple coats, using the Agmec internal pipe spaying method, to achieve the desired level of corrosion protection.

As a supplier to the ship Corroserve was given the opportunity to part sponsor the prestigious royal naming ceremony in September 2019. The event was attended by their Highnesses the Duke and Duchess of Cambridge

and Sir David Attenborough amongst many other dignitaries, with the Duchess officially naming the ship.



Corroserve was also awarded three VIP tickets to the event and a prize draw was held to choose the two employees who would accompany Phil Watkinson, General Manager/Director on the day. The lucky winners were Brian Foran and John Cunningham who are pictured at the event with Phil and the High Sheriff of Merseyside; David Steer Esq QC DL.



In this issue

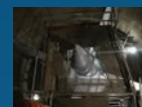
Page **2**
Long Term Protection for Seawater Pump Discharge Head And the Winner Is....



Page **3**
Everything's Ship-Shape at Corrocoat Hellas
Corrocoat Zip E Beats off the Competition



Page **4**
Corrosion & Abrasion Protection for Slag Silo Dividing Cones Using Rezorect
NEW PRODUCT – Corrocoat SEL



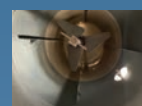
Page **5**
100 Operatives.... 50 Vessels.... 3 Weeks 24/7? No Problem!
Protection Against Abrasion



Page **6**
Well Blow Me Down
Refurbishment and Corrosion Protection of a Cast Iron Condensate Pump Casing



Page **7**
Going, Going, Gone!
Sweet Smell of Success



Page **8**
Ten Years On....Still Going Strong





LONG TERM PROTECTION FOR SEAWATER PUMP DISCHARGE HEAD

Uni-Arab Engineering and Oilfield Services in the United Arab Emirates were approached by a contractor, Pilco, on behalf of their client Adnoc Offshore, to internally line a seawater booster pump discharge head. The newly fabricated discharge head would be subject to constant corrosive seawater service and the client wanted to ensure it was fully protected in order to extend its service life.

It was delivered to Uni-Arabs workshops, having been abrasive blast cleaned by the contractor, where a full inspection was completed. The surface profile was found to be in line with the requirements of the specification measuring $65\mu\text{m}$ and salt tests revealed contamination levels of $0.5\text{mg}/\text{cm}^2$.

Having passed the inspection, coating work was started immediately in order to achieve the client's tight deadline.

Polyglass VEF and VEHA were applied at a DFT of $1500\mu\text{m}$ to provide comprehensive protection against seawater corrosion. A series of QA tests were conducted after curing including spark tests and no pinholes were found in the completed coating surface.

The completed unit was then prepared for onward transportation to the client for installation offshore.



AND THE WINNER IS....

In the February 2019 issue of this magazine we reported on a project completed by Corrocoat SA at the Eskom Medupi Power Station – one of the world's largest coal fired power plants. Corrocoat SA was appointed as the nominated contractor to apply a protective coating of Corrothane XT to the internals of six stainless steel flue cans. At the time we were impressed with the scale of the project noting: "A major project, at one of the world's largest coal fired power plants, requiring a team of 35 to apply nearly 4000 litres of specialist corrosion protection coatings, to strict time constraints and at a height of 220m. Now that's a challenge Corrocoat SA could not walk away from!"

Now it seems we were not the only ones to be impressed as in October of this year Corrocoat SA received the Project of the Year Award at the South African Corrosion Institute Annual Award Ceremony, for the Medupi Flue Stack Can Project!

Great people, doing great work to protect vital plant against corrosion – that really is something worth recognising and celebrating! Well done Corrocoat South Africa – keep up the good work.



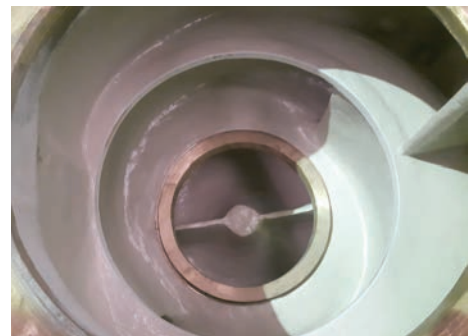


Everything's Ship-Shape at Corrocoat Hellas

A bronze main engine sea water pump was considered as fit only for scrap. The shipping company was ready to replace it with a new pump until they contacted Corrocoat Hellas. Messages were exchanged between the company and the ship's Chief Engineer who forwarded images from the vessel to see if a repair was possible. Corrocoat Hellas was able to inform him that this kind of work is a routine job for them. He was told that he could send the pump to their workshop for a full inspection and evaluation of the repair work required.

After a full and detailed inspection, Corrocoat Hellas confirmed to the client that the casing, despite severe damage, could be repaired and that the pump needed a full programme of overhaul and repair. It was stripped, blast cleaned and refurbished using Corroglass 600 series and finally post machined. Corrocoat Hellas also fabricated a new stainless steel shaft, bronze wear rings and replaced mechanical seal and O-rings. After assembly the pump was pressure tested.

The client was so satisfied with the quality of the work and that it was done at a fraction of replacement cost, that further work on pumps from other vessels in their fleet has since been forthcoming.



CORROCOAT ZIP E BEATS OFF THE COMPETITION



The coast of India is home to a number of large petrochemical and power industries. Kirloskar Corrocoat Private Limited has a proven and reliable track record in internal and external pipe coating to protect against the saline atmosphere found at the coast and against soil corrosion of underground pipelines.

In an expansion project, one of India's leading crude refining and petro chemical companies required corrosion protection for stainless steel pipes which were to be buried in the coastal belt in chemically aggressive soils. The pipes would require a proven coating to protect them and extend their service life in these testing environments. KCPL's pre-tendering efforts successfully

replaced technologies such as 3LPE etc. Corrocoat Zip E – a glass flake was specified to protect the pipes.

The overall pipe installation project was awarded to a contractor (LSTK) with whom KCPL had an agreement to coat the pipes with Corrocoat ZIP E at 1000µm- the specified DFT. For organisational efficiency KCPL technicians carried out the coating works at the pipe manufacturer's premises.

KCPL secured this order despite stiff competition from other international paint manufacturers, as customers continue to be impressed with the company's long and proven track record and coating expertise.

CORROSION & ABRASION PROTECTION FOR SLAG SILO DIVIDING CONES USING REZORECT



The dividing cones inside a slag residue silo, manufactured from Hardox 500 steel, were subject to a constant abrasive environment. The client required a solution that would prolong the overall expected service life of the steel cone structures by applying a protective, abrasion-resistant coating over the steel structure.

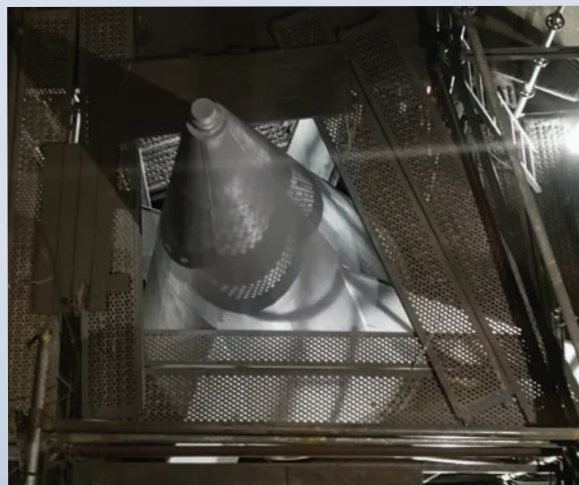
Corrotech recommended using a trowel applied abrasion-resistant compound – Rezorect 125 Ceramic Wearing Compound, from the Rezorect family of engineering emergency repair products. Rezorect 125 was specially developed to protect against entrained particulate abrasion and wearing surface abrasion.

The surface of the cones was abrasive blast cleaned to ISO8501-1 Sa 2½ to achieve the required cleanliness level and a Soluble Salts Attendance Test (Bresle Method) was conducted before priming with Rezorect 198.

Corrofill E was applied by hand to smooth all welded areas and irregularities, and a lamination layer applied to critical areas using Epoxy Laminating Resin and multiaxial glass fibre cloth 600g/m².

Rezorect 125 was then applied, again by hand, in two layers to a desired thickness of 8mm, and following a suitable curing period, DFT and holiday detection tests were completed to ensure the quality of the work completed.

The slag silo dividing cones were then ready for recommissioning, ensuring the coal power plant was fully protected against abrasion.



Rezorect
PROBLEM SOLVED...

**NEW
PRODUCT**

Corrocoat SEL

Corrocoat SEL is a spray applied epoxy glassflake lining, intended for single or multi-coat application, that provides durable chemical protection in aggressive atmospheric conditions and immersed environments.

Corrocoat SEL has a smooth finish and can withstand immersed temperature levels up to 90°C in oil, and non-immersed levels up to 100°C. It displays excellent resistance to discolouration that can occur on exposure to strong concentrations of acid. SEL has excellent application characteristics and edge coverage in single coats and is predominately applied by airless spray for speed and ease of application. A brush can also be used for modest areas as dictated by a particular project or on-site conditions.

An ideal choice in the protection of new and existing storage tanks and vessels in testing service environments including hydrocarbon service, Corrocoat SEL can also be used on structural steel, bridges, pilings decks, externals of process vessels/pipelines, jetties, ships hulls and other marine environments.

100 OPERATIVES.... 50 VESSELS.... 3 WEEKS... 24/7? NO PROBLEM!



During September and October 2019 Corrocoat Caspian was appointed by KPO (Karachaganak Petroleum Operating b.v.) as a key contractor for the lining of process vessels during a shutdown event which happens only once every five years.

KPO b.v. is a consortium of international oil companies Royal Dutch Shell, Eni, Chevron, LUKOIL and KazMunaiGas who are developing the huge Karachaganak gas condensate field – one of the world's largest. Located in northwest Kazakhstan it covers an area of over 280 square kilometres and holds an estimated gross reserve of over 2.4 billion barrels of condensate and 16 tcf of gas.

Corrocoat Caspian was required to mobilise more than 100 operatives and all their equipment, including 18 airless pumps, to line 50 process vessels with Corrothane XT. The material was manufactured by Corrocoat in Almaty. Corrothane XT was selected because of its resistance to Karachaganak's harsh processing conditions.

The job was completed within three weeks, working 24 hours a day at four different plants concurrently. Although the schedule was tight, the Corrocoat team managed to complete part of the contract before the deadline allowing KPO to launch the facilities earlier than planned – resulting in significant savings.

KPO management expressed its gratitude for the speed and quality of the work completed to a very tight schedule.



Protection Against Abrasion



In Qatar, Al Huda Corrosion Treatment was asked by Petrotech to inspect and recommend a coating system for internal corrosion protection of a hydrocyclone and its band lock. The hydrocyclone is used to separate two liquids of different densities, which in this case was oily water as well as sand creating an abrasive in-service environment.

After inspection Al Huda recommended coating the cyclone with Plasmet HTE on the internal surface and door where heavy abrasion could be expected. Polyglass VEHA was used to rebuild the band lock closure areas to ensure the vessel could be completely sealed.

The vessel's various internals and door surface were pre-machined to undercut 2mm from the internal diameter and from the band lock surface. Abrasive blast cleaning using steel media was completed to Sa 2½ in order to completely remove a previous failed lining. A minimum surface profile peak of 75µm was also



specified. The coating procedure started with a priming coat at a DFT of 300µm, followed by a second coat of Plasmet HTE to reach a DFT of 2200µm.

The performance of the finished coating in service conditions is reported to be excellent after a pressure test was completed on the hydrocyclone at 1.5 times operating pressure with no leakage detected.



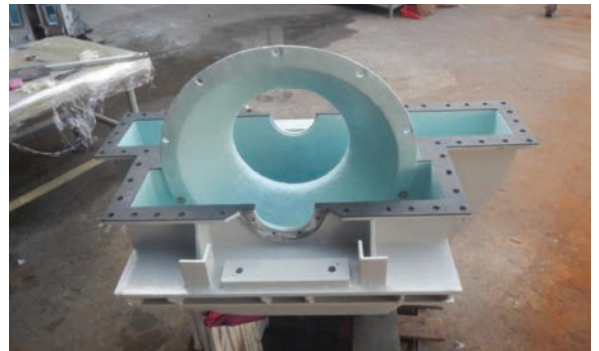
WELL BLOW ME DOWN

Vietnam Glo Coating Engineering JSC (GCE) was required to refurbish, repair and coat a casing of an inert gas blower by plant operator Pvtrans Oilfield Services. The casing had in the past been coated with a rubber lining which would need to be completely removed as part of the work using UHP water jetting and hand tools where applicable.

The internal surfaces were first abrasive blast cleaned to the required cleanliness level. A primer coat of 632 was applied initially followed by a build coat of 602-632 before the application of a final coat of Corroglass 652 dyed blue. All three coats achieved a combined DFT of 1800µm. GCE also fabricated new EPDM rubber gaskets for the gas blower casing.

The externals of the casing were prepared with a high pressure wash down to remove any oil and contaminants. It was then abrasive blast cleaned and two coats of Plasmet ZF and final top coat of industrial enamel were applied to complete the work.

The before and after images speak for themselves regarding the professionalism and quality of the work completed and the client was very pleased with the refurbished casing.



Refurbishment and Corrosion Protection of a Cast Iron Condensate Pump Casing



Corrocoat's Belarusian partner (Corrocoat AKZ) was recently commissioned to complete the refurbishment and corrosion protection of a cast iron condensate pump casing at a power station. The pump had been in operation for circa 10 years; pumping water at a temperature of 20-60°C with thermal spikes up to 70°C. On inspection it was found that the pump casing's internal surface had suffered from cavitation and erosion wear. The depth of corrosion pits was in the range of 10-15 mm and the whole casing surface needed to be restored to original condition.

The client required a coating with excellent erosion and cavitation resistance and AKZ proposed the following, which was accepted. The internal surface of the pump casing was abrasive blast cleaned to ISO 8501-1 Sa 2½, after which Corrocoat EA was applied as a filler in the deep pockets of the eroded areas. This was followed by a top coat of Corrocoat EB at a minimum DFT of 2000µm.

As a result of the refurbishment and relining, the pump casing was restored to the required thickness and the applied coating system will provide resistance to the effects of cavitation for a long period. The client was extremely pleased with the outcome of the work and with the savings achieved when compared to the cost of replacement.



GOING, GOING, GONE!



In line with a tradition that stretches back decades, the staff at Corrocoat head office in Leeds all got together on the last day before the Christmas break, for the annual grand auction.

Each year a number of suppliers and contacts are kind enough to acknowledge with seasonal gifts their appreciation of the relationship with Corrocoat. It was decided many years ago that these gifts would be collected together and auctioned on the last day of business to the whole company. So, after a buffet lunch, laid on by the company, the whole team gathered in the engineering workshop for the main event, hosted, as ever, by our CEO, Charles Watkinson. Bidding this year got off to a lively start and really started to peak when a number of sumptuous Christmas hampers were offered for sale.



All profits from the auction are presented to a Leeds homeless charity called St Georges Crypt who focus on accommodation, training and mentoring to transform the lives of homeless people around the city. This year a grand total of £1,000 (\$1,300 US Dollars) was raised (including a generous company contribution) and was donated to St Georges as a gesture of Corrocoat's continued support for this worthy local cause.



Sweet Smell of Success

A vessel at a fragrance plant was used for mixing geranoil, acetic acid, and dosing with 50% NaOH. The neutralisation of the 50% NaOH in the process produces highly corrosive sodium acetate, a soluble salt which in just six years had effectively destroyed a previous epoxy coating and had begun to corrode the vessel itself.

After required welding repairs were completed the entire tank was blast cleaned and then washed to remove soluble salts and then blasted again to a SSPC-SP10 quality. A holding primer was applied to the prepared surface prior to all pits being filled, all edges and transitions being laminated, and stripe coats applied to weld overlay sections. In areas of heavy localised pitting a layer of fiberglass provided increase strength as well as corrosion resistance. Flanges and nozzles were laminated prior to being coated to provide increased protection in these failure prone areas.



On completion of the preparation work the barrier coat (Polyglass VEF) was spray applied to a thickness of 1200µm. After the initial cure an additional coat of Polyglass VEF WR was applied over the barrier coating at a thickness of 600µm.

By using a selection of specialist Corrofill, Polyglass and Corroglass coatings Corrocoat USA was able to return the tank to service fully protected against an aggressive service environment and at a cost far below that of replacement.



TEN YEARS ON....STILL GOING STRONG

Ten years ago the whole of South Africa was busily preparing to host the football World Cup. Work on the stadia was on time but due to pipeline construction delays there were some concerns over supplies of aviation fuel being in the right place for the extra air travel generated.

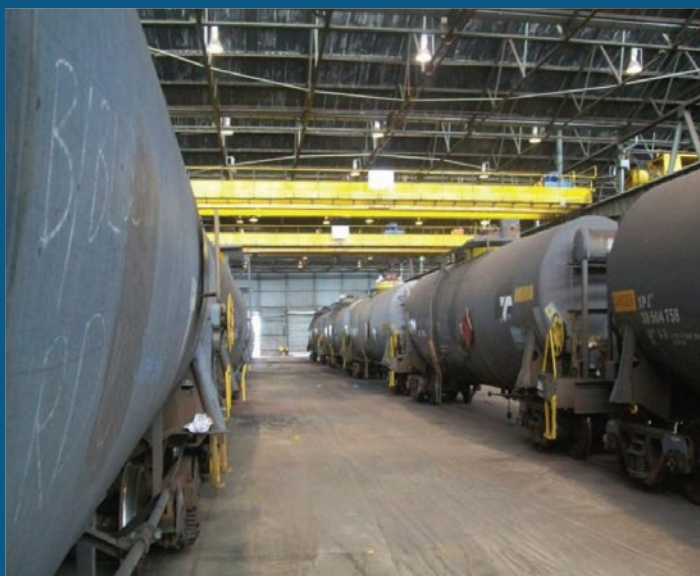
Transnet, Africa's largest rail freight transporter, had a fleet of 400+ liquid rail tank wagons ready to take the job on but there was a problem. In order to carry aviation fuel the tanks first had to be protected against jet fuel and that's when Corrocoat SA was consulted.

Corrocoat SA proposed using Zip E (also called Petro Zip in South Africa) in a one-coat application on the suitably prepared tank internals, reducing labour costs by half when compared to a two coat system. Zip E had previously been approved for use in jet fuel applications following independent laboratory tests carried out by BP, Shell, SAPREF and Transnet. The tests concluded that there was no contamination of the jet fuel by the ZIP E coating used on a railway truck containing 60,000 litres of jet fuel left standing for seven days.

So, from November 2009 through to April 2010 Corrocoat got to work, cleaning, blasting and coating a total of 413 railway tanks, all in time for the 19th FIFA World Cup to kick off in June 2010.

The customer had deemed that a five year life expectancy for the rail tanks was an acceptable return on investment, but the ZIP E coating wasn't going to stop there. In 2019 a 10th anniversary inspection of the tanks found the Zip E coating to be still in perfect condition and promising many future years' service.

Now that's a return on investment!



GOT AN INTERESTING STORY?

If you would like one of your recent contracts to be featured in Corrocoat News and share your engineering and coating expertise with a world-wide audience, then please get in touch. Ideally we would like a selection of hi-res images and approximately 200 to 350 words describing the contract, the challenges you faced and overcame and the benefits to the customer. To discuss how you can get involved please contact Paddy Bowes at patrickb@corrocoat.com.

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