

Your Pump and Valve

Wear & Acid Protection Specialist

“Ziroflex Coating”



STANFRA
ABRASIVE SOLUTIONS

PROFILE
2024



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SCOPE OF Business



Stanfra Abrasive Solutions was registered in 2008. The company's main area of activity is the reconditioning of equipment used in the mining and paper industry and includes pump shafts, impellers, sleeves, bearing housings, volute casings, rear cover plates and pump helicals.

The company specialise in Zirolflex® Coating, Zirolflex® TR coating for acid protection and Epoxy Repairs (Belzona & Thortex Ceramic). Zirolflex® Coating applying to valve and pump components that have subjected to the most aggressive of applications, benefits from a surface hardness of 65-70 Rockwell C / 900 Vickers compared to 32 Rockwell C to 316 stainless steel. The Zirolflex® process results in the following properties:

Lower co-efficient of friction and resistance to the wear mechanisms of abrasion, adhesion and erosion. The Zirolflex® process ensures that the lifespan of these parts will outlast the original by TWO to FOUR times. A number of mining houses have applied the process to new components such as ball / plug valves, impellers, shafts and volute casings. This has extended the life of these parts way beyond the their normal maintenance intervals.

Epoxy repairs (Belzona & Thortex Ceramic) on pumps / multistage pump casings / general repairs on related rotating equipment, Cosmetic repairs and Epoxy linings, HVOF(High Velocity) Thermal Spray - 420 Stainless Steel, Tungsten Carbide and Chrome Carbide etc. (Wear protection coatings).

MISSION AND OBJECTIVES

To supply and provide a consistently high service and quality to all our customers.

Stanfra Abrasive Solutions offers a sound and secure maintenance and repair service. This impacts positively on year end balance sheets since effective maintenance management limits costly downtime and increases productivity. By means of Stanfra Abrasive Solutions involvement in their plants and equipment, our clients have greatly increased the life of many components.

RECONDITIONING OF THE FOLLOWING

- Reconditioning of Ball / Plug / Butterfly / Pocket / Trunnion Floating Ball / Segment valves.
- Mono, Orbit & Cemo Pump Spares.
- Thermal Spray and Polymer Coating Solutions.
- Hydraulic and Pneumatic Cylinder Reconditioning.
- Specialised Hardface welding / Cladding.
- Supply and manufacturing of all White Metal Bearings, Silicon Carbide & Ceramic Bearings.

SUPPLIERS OF

- Non-asbestos gaskets in sheets and ready cut form, Cork materials, rubber and pump packings.
- A wear resistant impellers for Warman, Envirotech and Denver pumps.

ENGINEERING

- CNC Machining and Milling
- Horizontal shaft / Sleeve grinding

INDUSTRIES WE SERVE

Paper and Pulp:

**Control Valve Reconditioning,
Segment Ball Valve Reconditioning
Actuator & Actuator Barrel Reconditioning
Knife Gate Valve Reconditioning
Ball Valve Reconditioning**

Chemical and Petrochemical:

**Centrifugal pumps (Impeller, Volute, Cover, Shaft sleeves)
Valves - Ball / Plug / Pocket / Segment (ball, seat, body) with stem & seal kits
Piston pumps (Piston)
Mono Pumps (Rotor & Mainshafts)
Reconditioning of Actuator and Actuator barrels**

Mining:

**Mining dewatering pumps (Impellers, Wear rings, Shafts, Sleeves)
Sludge pumps (Piston)
Slurry valves (Ball, Butterfly, Gate, Dome)
Extraction fans (Vane tips)
Refrigeration plant (Impellers, Casings, Shafts)**

STANFRA TRADING
Bethlehem

1 December 2014

Dear Mr. F. Marais,

The Zirotex Coating principle was introduced to Mpac Piet Retief Mill in March 2010 by your company Stanfra Trading. It is with pleasure that I refer to the reports below as compiled by our Instrumentation Foreman, to display the excellent performance of the Zirotex coatings as applied in our plant.

First Report - March 2010 (by Werner Swanepoel)

Parts treated by the Zirotex Coating (Electrolytical Process) benefits from surface hardness of 70 Rockwell C on 20 micron, compared to 32 Rockwell C to 316 stainless steel.

I gave Stanfra Trading a DN150 stainless steel NAF valve for a trial. This specific valve was completely scrapped as the body was corroded through, the seat and ball segment was also corroded beyond economical repair.

Two weeks later Stanfra returned the repaired valve which I couldn't believe at first until I saw the marks I've made on the spare parts of the old valve before giving it to them. To tell the truth, the repaired valve was in a better condition than a new valve from the original supplier.

The following shut in March 2010 the valve was re-installed at the same position where it came out of (FC-1433), and usually only lasts three months due to small control opening and high noise before it is completely scrapped.

At the same time we installed a new DN150 NAF valve in the same application FC-1434. In July 2010, I removed the two valves for inspection on a shut down. The overhauled valve had absolutely no damage at all where the new valve from the supplier had to be replaced due to severe damage.

The repair cost on the old valve came to one third of the price of a new valve, which I think could raise a huge saving.

I would recommend this product to the Engineering Dept. for all moving parts on pumps, valves, impellers and even volute casings.

Second Report – April 2012 (by Werner Swanepoel)

During the PM4 shut on the 12th of April 2012 we did a routine inspection on the above mentioned valves as discussed in 'First Report' (FC-1433/4).

Our findings were as follows:

We replaced both valves as they have some wear damage on the body, seats and segments.

Although we changed the valves I am very happy with the outcome after 25 months of operation in the specific application. The Ziroflex Coating to me is a big success, not only on the life span but also on the savings with these two valves over the past two years.

Savings:

New Valve from supplier costs R29,500 each
Replacement on a three monthly basis = R59,000 every 3 months
Repair cost to these valves were = R15,800 in 2010
If we had to replace every three months: 8 x R59,000 = R472,000

Thus:

R472,000 – R15,800 = R456,200 over 24 months.

This to me is a huge saving on only two applications. Just imagine the saving on 300 loops! Where we normally replaced these valves on a three monthly basis we may now successfully do routine inspection on these valve maybe on a 12 monthly basis.

I am sure that the other MPACT sites will also gain great benefit and savings from this product, not only on valves applications, but with any other wearing equipment.

Third Report – April 2014 (by William du Plessis)

By the time I took over by Werner, all the above mentioned was already in place, I was fortunate to be involved in an exercise where we compared the prices of new valves to Stanfra Trading reconditioned valves and comparing the life span of both valves. The comparison was a no brainer and these reconditioned valves had become a standard applied to our department. All damaged valves are to be reconditioned by Stanfra Trading.

I have had other companies which promise and offer the same type of repairs but not come close to their work. Stanfra Trading has impressed us so that we have recommended it to our other MPACT sites so we can all benefit from it.

Other Examples of Zirolflex use on Piet Retief site:

- 1) Digester Sandtrap valve: The valve after repair is still class 4, the same as a new valve.

Stanfra did do some more critical valves like the sand trap valve where they manufactured a new ball and seats with pressure test certificate which is class 5 on metal to metal seating.

The repair cost on this valve from Stanfra was R185,000 against R460,000 for a new valve and R319,000 for the repairs to this valve from the original supplier.

- 2) Copeland Temperature Probes: We have applied the Zirolflex coating on the Copeland Reactor temperature probes which lasted about six months without the coating. After the Zirolflex application the probes lasts for more than one year (double the previous life span).
- 3) PM4 Wire and Fabric guide paddles: We applied the coating on these paddles in the beginning of 2011. Normally the fabrics cut through the paddle on a six to eight month cycle, depending on the application. We haven't replaced one paddle yet for wear since.
- 4) Valve Actuator Barrels: Stanfra Trading did repairs on damaged barrels with the Zirolflex coating. This repair and quality will be advised to any company at a fraction of the cost of a new barrel.
- 5) Knife and Through Gate valves: This is a new application that we are currently testing, and it seems the wear on the spade of the valve is well in hand. There is really a big difference over a certain time span so far on the waste plant applications. The repair on these valves also came in at about a third of the cost of a replacement valve.

Regards,

Johan de Waal
Senior Engineer Electrical & Instrumentation
Mpact Piet Retief Mill

06 April 2021

To Whom it may concern

This letter serves as a motivation for the future possible supply & installations of locally manufactured Segmented ball valves by Stanfra Trading(Pty)Ltd - South Africa.

The area that was selected for a performance test valve was one of the most severe ones in the Paper and Pulp industry namely the Waste Plant where water, sand, staples and plastic materials are present with a mean temperature of between 45 and 55 degrees C. Operating pressures of between 4 and 6 bar. PH neutral with a consistency of 4,5%.

Past history :- Imported Segmented ball valves are currently being used since 1982.

We installed the first DN 100 Segmented Ball Test Valve from Stanfra Trading(Pty)Ltd in June 2020 allowing for a fair performance test of 3 months also inspecting the internals on a fixed frequency during maintenance down times of the plant.

The results were favourable to the engineering staff and No wear patterns were reported for action during this time. The test valve did Successfully Passed the test and only minor wear was observed after 4 months of installation. Current segmented ball valves used from other suppliers normally last between 2-3 months. This valve is currently still running after 9 months – March 2021.

This letter acts as a final recommendation and spells out the benefits for localisation :

100% locally manufactured in South Africa.

Price savings of up to 50% on the purchase of new units.

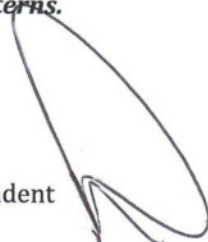
No risk of long delivery periods from Europe or Asia.

Locally reconditioned by Stanfra Trading(Pty)Ltd.

Adaptable to suit any flange dimension or styles.

All valves will be overlaid with Stanfra Trading's Zirolflex hard finish coating to combat excessive wear patterns.

Werner Swanepoel
Pulp Mill Superintendent



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Directors: A J Phillips (Chairman), B W Strong (Chief Executive)
N P Dongwana, N B Langa-Roy (Chief Financial Officer)
T D A Ross, A M Thompson

14 June 2022

Kimberly-Clark Enstra Mill
East-Geduld Road
Enstra
Springs
1559

Dear Stanfra Trading Company Representative,

Loan Valve performance Report – 4 inch Wafer valve

This short document serves as a report on a loan valve with Zirolflex hard finish we received from Stanfra Trading (PTY)Ltd during the month of May 2021. The valve was installed for ten months. The effective run time of the plant was five months. Wear on the valve was measured during this five-month period.

The valve was installed in the recovered Fiber plant on a rejects line which is a harsh environment due to the solids staples and sand particles present in the reject pulp from a screening section of the plant. The valve was also subjected to a severe differential pressure across the valve due to the design of the plant causing a lot of cavitation across the valve. This adds to the quick wear on the valves.

The loan valve we received from Stanfra with Zirolflex hard coating for testing performed excellent in this application. The wear was less on this valve compared to similar valves we use in the plant. We will use and recommend this valve for similar applications. We already make extensively use of Stanfra Trading to repair and Zirolflex our valves in certain applications and are very happy with the results. I will recommend Stanfra for repairs on valves, pumps and equipment subjected to a lot of wear and the cost saving involved other than to replace with new units.



With Zirolflex Coating –
Minimum Wear visible

Without Zirolflex Coating
– Aggressive Wear visible



Kagiso Kotu
Plant Manufacturing Engineer

Innovation & New Products Awards

STANFA TRADING

is awarded **WINNER** of the

Local Design and Manufacture
Industrial

Gary Swain

MD: Specialised Exhibitions

Eric Muggenman

CEO: SACEEC

19 July 2023

Date

Coating Ziroflex

Applications



200mm

Ball

Before and After



S/Steel

Volute Casing

Rebuild



S/Steel

Ball & Segment

Valves



DN 200

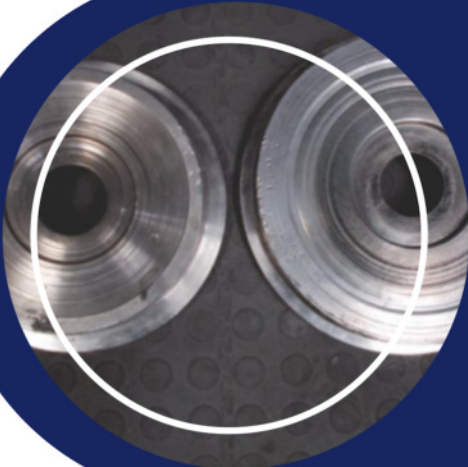
Pocket Valve

Reconditioned and Pressure Test



Backplates - Stuffing Boxes

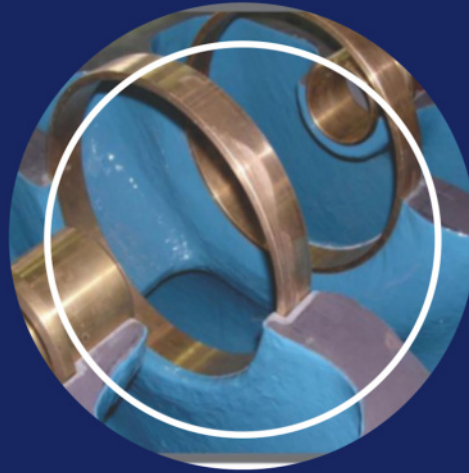
Before and After



SDA 300 / 400

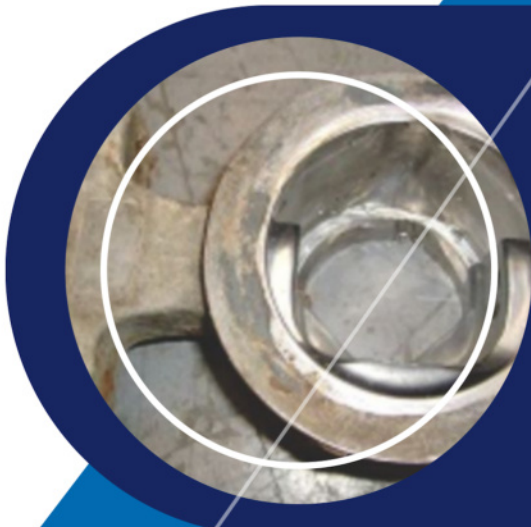
Envirotech Pump

Rebuild



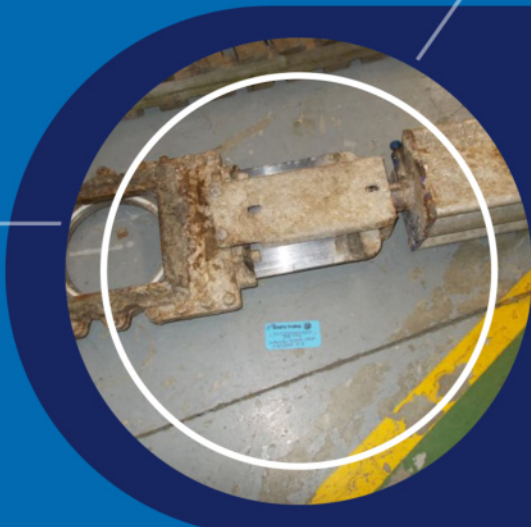
Segment **Ball Valve**

Before and After



Reconditioned **Knife Gate**

Valves



Pulp & Paper

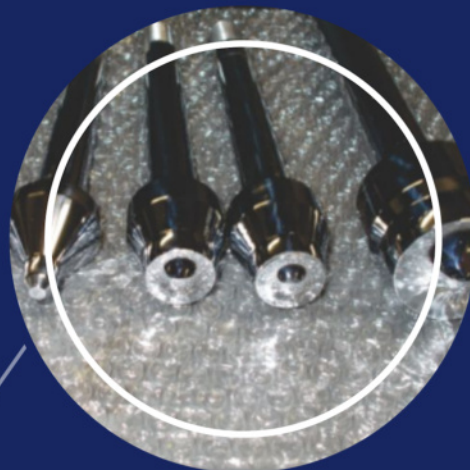
Drum Thickener

Reconditioned



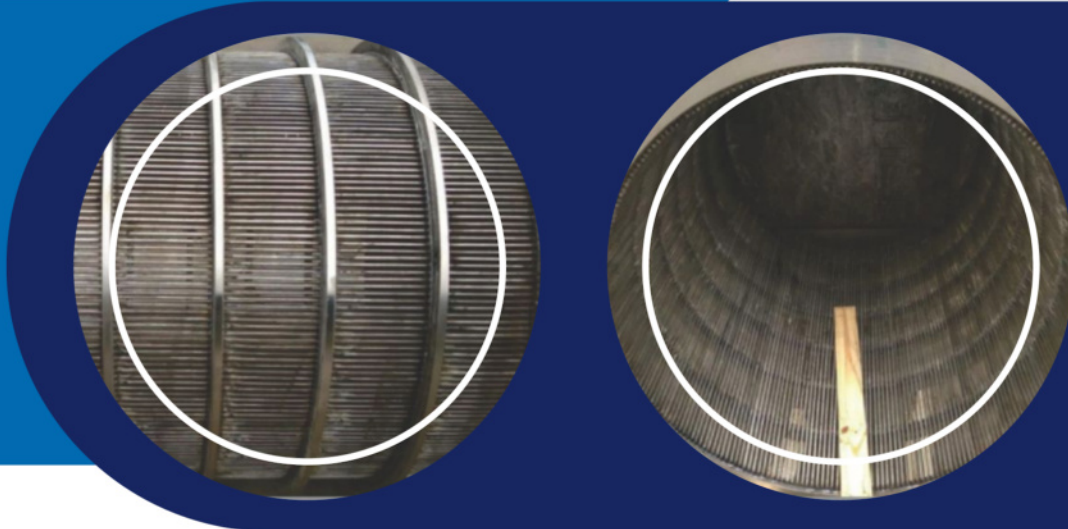
Reconditioned Valve Plugs

Before and After



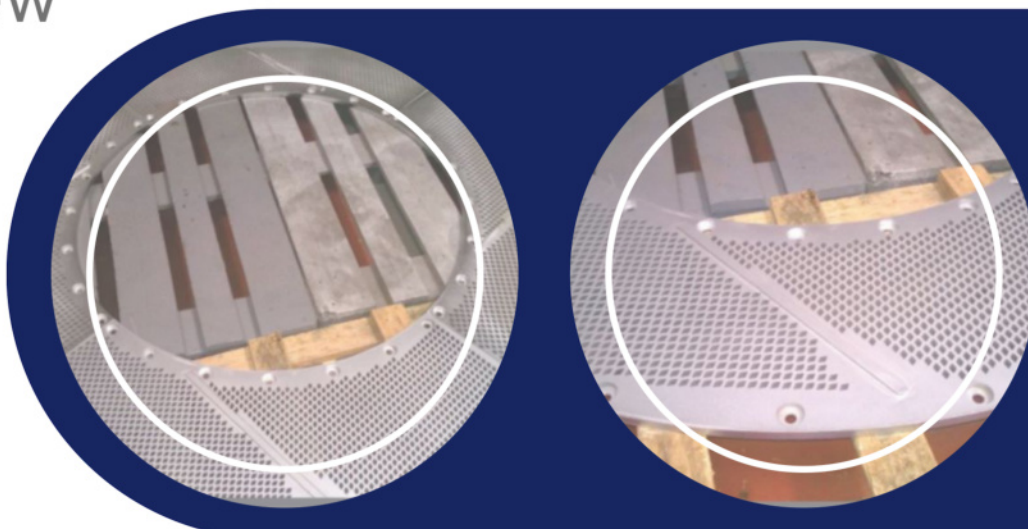
Manufacturing of **Top Separator Basket**

New



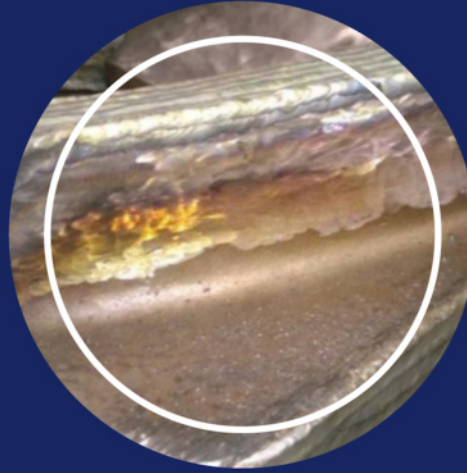
Hydrapurge **Rotor Screens**

New



Reconditioning of Hydrapurge Rotor

63.25"



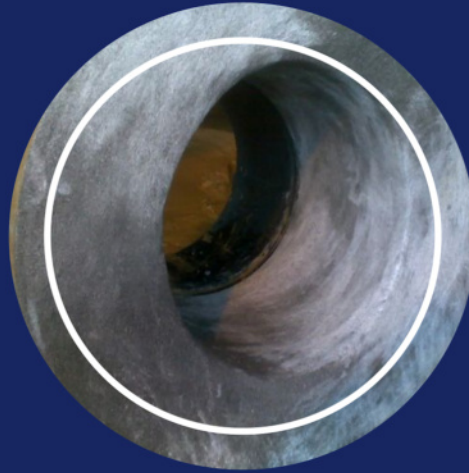
Reconditioning of **Repulper Rotor**

42"



Warman Pump **Wear Plate**

Rebuild



Coatings

Epoxy Wear

Rebuild



Contact

Information



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Francois Marais

Director



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Notes



- **Ziroflex Hard Chroming - Wear**
- **Ziroflex TR Coating - Corrossion**
- **Reconditioning of Pumps / Valves**
- **Gland Packing & Mechanical Seals**
- **Engineering - Turning & Milling**
- **General Castings & Forgings**

