

stainless steel

the journal of the southern africa stainless steel development association



ISSUE 2: 2023

STAINLESS ISSUES A RALLYING CALL TO SA RAIL



CAN STAINLESS COMPETE WITH PLASTIC?

NITRIC OR CITRIC

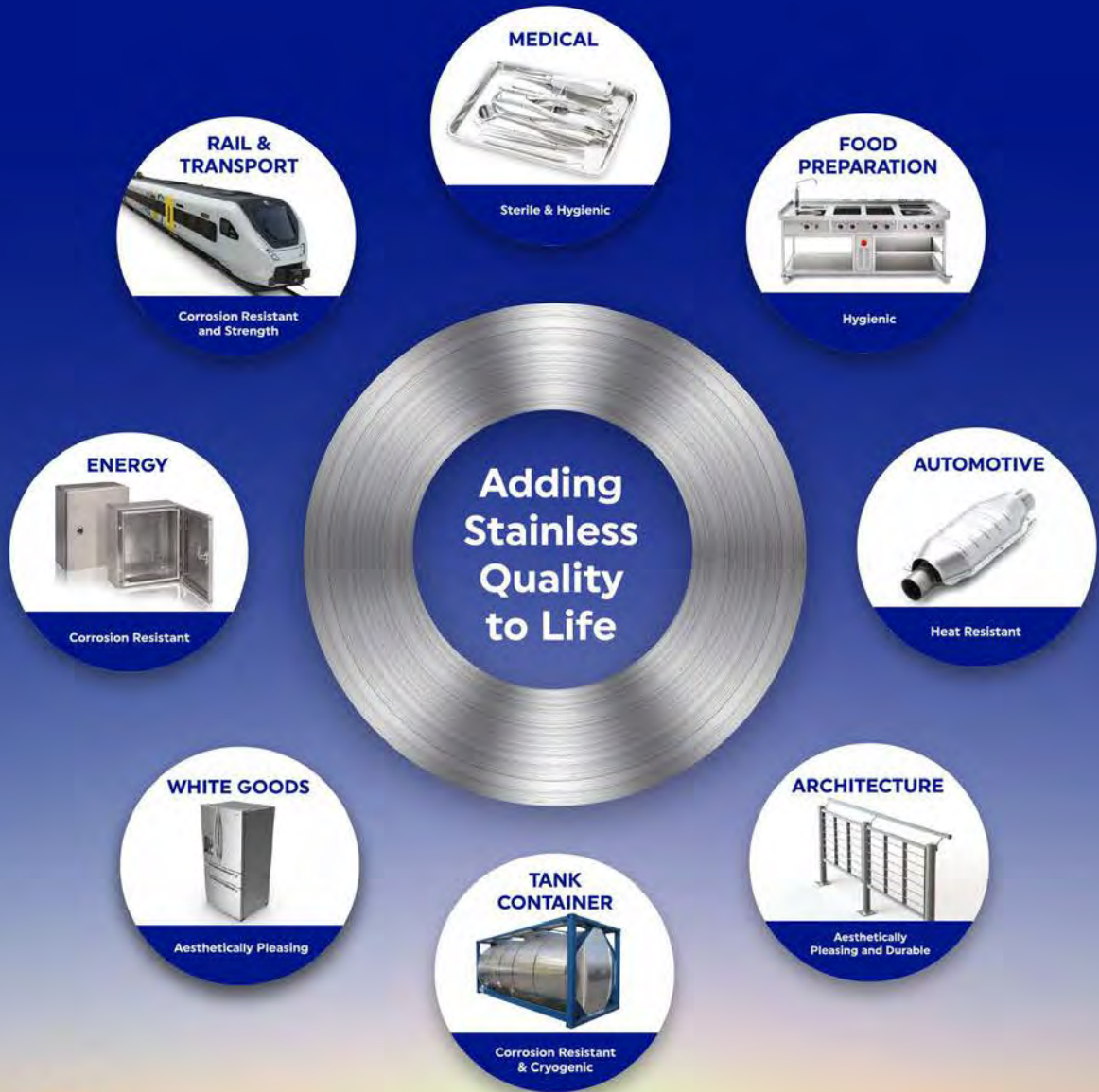
A passivation challenge for
the ages!

JOHN CLUETT

A legend remembered

MAKING TOMORROW STAINLESS

www.columbus.co.za



**COLUMBUS
STAINLESS**
— [Pty] Ltd —

A Subsidiary of ACERINOX, S.A.



Headline Sponsor

**COLUMBUS
STAINLESS**
[Pty] Ltd

Contents

1 Perspective

With great challenges comes the opportunity to grow!

3 Market Intelligence

The best of the GPS E-Newsletter

6 Market Intelligence

Webinar report back - can stainless steel compete with plastic?

7 Market Intelligence

State of the stainless steel nation

13 Demand Drivers

SA rail industry strongly advised to embrace stainless steel amidst crisis

17 Africa Profile

Rwanda on the rise

21 Case Study

The 'acid test' when it comes to effective passivation

25 Case Study

Real world examples of the true value of life cycle costing

29 Technical Insight

How to enhance the beauty of stainless steel

33 Professional Profile

A passion for stainless

36 Obituary

A renowned pioneer in the brewing industry and champion of stainless steel

37 Staff News

A quest to elevate SA's stainless steel sector

39 Member News

Sassda collaborates to enhance stainless steel tooling skills in SA

40 Member News

Southern african steel summit to drive industry competitiveness and innovation

41 Sassda News

Record attendance and perfect weather make sassda KZN golf day a resounding success!

42 Sassda News

Sassda hosts successful visit to the only stainless steel mill in Africa!

Adverts

- Columbus Stainless
- EMV Africa
- Fastenright
- NDE
- PFERD SA
- Macsteel VRN

Advertorials

- Multi-Alloys
- Grinding Techniques

Contact us

TELEPHONE NUMBER
011 883 0119

EMAIL
info@sassda.co.za

WEBSITE
www.sassda.co.za

Sassda

MICHEL BASSON
Executive Director
michel@sassda.co.za

FRANCIS LE ROUX
Head of Administration
francis@sassda.co.za

MANKABE MORE
Education & Training & Marketing
mankabe@sassda.co.za

TEBOGO NKWE
Market Intelligence and Lobbying
tebogo@sassda.co.za

KIM STEVENS
Events, Email Marketing and Website
kstevens@sassda.co.za

JOSE HERON
Accounts
jose@sassda.co.za

LUISE ALLEMANN
Content, Social Media and PR
luise@mediaink.co.za

Stainless steel is published triannual and is distributed to stockists, distributors, fabricators, specifiers, consulting engineers, architects, mining, petrochemical and chemical industries, food beverage and pharmaceutical industries, consumer outlets, end-users, educational institutes and provincial and government departments. Sassda makes every effort to ensure the accuracy of the contents of its publications, but no warranty is made as to such accuracy and no responsibility will be borne by the publisher or Sassda for the consequences of any actions based on information so published. All opinions, views and expressions contained in this publication are not necessarily those of the management of Sassda. The contents of this publication enjoy positive protection under the Copyright Act and therefore copyright thereof is expressly reserved. Any copying, publication and distribution of part or whole of the publication is prohibited unless consent is granted by Sassda.

With great challenges comes the opportunity to grow!

The South African stainless steel industry has had a significant impact on the country's economy and industrial development since 1964. This is due to the fact that stainless steel is a versatile material known for its strength and durability, and I believe that these are the characteristics of the people working in the South African stainless steel industry. As you will see in this publication, it is also time for final farewells to one of these people John Cluett, who was a legend and stalwart in not only our industry, also in the international world of breweries.





State of our stainless steel nation

Looking at the current 'State of the Stainless Steel Nation' in this issue, one of the notable aspects of the South African stainless steel industry is its contribution to job creation and economic growth. The industry has provided employment opportunities for a significant number of people, both directly and indirectly. From stainless steel production and processing to downstream manufacturing and fabrication, numerous jobs have been created, contributing to the livelihoods of many individuals and families. In this edition, we feature an excellent example of the young professionals in our industry driven by a passion for the material and good business.

Furthermore, this issue shows the industry has played a crucial role in advancing technological capabilities within the country. The production and processing of stainless steel require advanced machinery, equipment, and expertise, leading to the development of specialised manufacturing and engineering skills. This has helped South Africa build a competitive advantage in the global stainless steel market and attract foreign investment.

A volatile market

In recent years, the South African stainless steel industry has faced several challenges. Economic fluctuations, global trade tensions, and fluctuating raw material prices have had an impact on the industry's performance. Additionally, competition from international manufacturers and fluctuations in demand have put pressure on local stainless steel producers. Sassda therefore maintains a good relationship with both government and peer organisations to address these impacts on our members and industry.

To address these challenges, the industry has focused on enhancing its competitiveness through innovation, research and development, and diversification. Efforts have

been made to expand the range of stainless steel products manufactured locally and increase value-added processes. This has not only helped the industry remain resilient but also stimulated technological advancements and increased its market share. An excellent example of this is the use of 3CR12 in the Rail sector and our interview with Columbus Stainless shines a spotlight on the incredible role stainless steel still has to play within this sector.

In addition, our association has actively participated in forums to stimulate local demand and contribute to increasing exports, especially in African markets. Read our overview on doing business in Rwanda in the pages to follow.

Solid prospects

Looking ahead, the country's infrastructure development plans, urbanisation, and increasing consumer demand for stainless steel products present opportunities for expansion.

However, the industry needs to continue investing in research and development, skills development, and adopting advanced technologies to remain competitive in the global market.

By leveraging innovation, diversification, and sustainable practices, the industry can position itself for continued growth and success in the future.

We hope you enjoy this issue!

Michel Basson
Sassda Executive Director



The best of the GPS e-newsletter

Each month Sassda rounds up a selection of global and local market intelligence articles that are sent to our members in an easy-to-read package of content. They're designed to highlight pockets of potential growth in demand for stainless steel. Here are some of the best articles from the last few issues...



Competition Commission launches inquiry into local steel market

The Competition Commission has gazetted the draft terms of reference for a new market inquiry into the local steel industry. The inquiry will examine whether there are any features or a combination of features in its value chain that impede, distort, or restrict competition in the sector. The inquiry will be confined to only two levels of the steel value chain - the raw materials and inputs, and the upstream steel production level. In addition, the inquiry will focus on the impact of these levels of the value chain on the domestic downstream steel market...[Read more](#)

New R30-Billion 'mega city' planned for South Africa

Citigroup Inc. is teaming up with South Africa's Gauteng provincial administration to fund almost R1.4-Billion of investment in a new mega-city project and airport south of Johannesburg. The development will include an airport, an industrial area, a city, and agricultural areas.

The US lender, through its South African unit, will make a seven-year loan facility available to a special purpose vehicle that will directly invest in infrastructure for the Mega River City on the banks of the Vaal River, Citi South Africa head Peter Taylor said.

The development could attract as much as R30-Billion in additional investment, he said...[Read more](#)



Construction mafia damage to the economy is worse than the government thinks

The construction industry's losses to marauding mafias are higher than what the government estimates them to be, SA Forum Civil Engineering Contractors (Safcec) estimates show. At a recent webinar, Public Works and Infrastructure Minister Sihle Zikalala cited a report that the industry had lost R63-Billion to criminal disruptions since 2019, but the Safcec estimates put the figure at R63-Billion for 2018/19 only. In addition, Safcec estimates that in January 2020 losses for that year alone would amount to R40.7-Billion...[Read more](#)



Government takes R2.7-Billion stake in one of South Africa's newest & fastest-growing cities

The government, through the Public Investment Corporation (PIC), is set to acquire a 30% stake in Waterfall City for R2.7-Billion, after signing a binding agreement with developer Attacq this week. The PIC and the Attacq Waterfall Investment Corporation (AWIC) have concluded binding legal agreements, detailing the terms and conditions of the proposed transaction. The newly developed city, which is home to Mall of Africa, the PwC tower, and a host of other new residences and office developments, is one of the fastest-growing precincts in the country...

[Read more](#)

A hydrogen economy may fuel a more solid development drive in Southern Africa

Southern Africa's energy sector, including Namibia and South Africa, is exploring the potential benefits of embracing a hydrogen economy, primarily driven by green hydrogen, a clean and natural energy source. Recent interest in this arises from the global push for sustainable energy options.

Green hydrogen can be produced by electrolysing water into hydrogen and oxygen using energy from green sources like the sun, water, and wind. This process is deemed "green" because it does not make greenhouse gases. When hydrogen fuel is burned, it turns into water instead of carbon dioxide, as happens when fossil fuel is burned. Of particular value in the move towards a sustainable energy system, green hydrogen can be used in hard-to-decarbonise areas like heavy industry and transportation... [Read more](#)



Stainless steel tubes and pipes benefit from high growth industries

The current economic uncertainty has left the tube, pipes, and fittings sector relatively unscathed. Overall, the post-COVID economic recovery – though weak because of inflation and the ongoing war in Ukraine – provides a positive environment, with certain regions and sectors driving growth. The global stainless-steel tubes and pipes market, estimated at \$32-Billion in 2021, is anticipated to grow to \$44.7-Billion in 2028, with an annual compound growth of 4.6% (1) ... [Read more](#)





Government finalising big change for SA business

Trade and Industry Minister Ebrahim Patel says his department will finalise the Companies Amendment Bill in Cabinet within three months, which aims to narrow the gap between the highest-paid and lowest-paid employees at listed companies.

The proposed Bill, published for public comment in 2021, said that listed companies would have to disclose the ratio of the top-paid to the bottom-paid 5% of workers. Speaking before Parliament, Patel said that finalising the Bill will help to address South Africa's inequality issues...[Read more](#)

R200-Million boost for Cape Town's economic sector development

The Cape Town City's Council-approved budget for 2023/24 has allocated close to R200-Million on various programmes aimed at assisting all sectors and levels of the economy, from work seekers, entrepreneurs, small business, and high growth sectors. In addition, the Economic Growth Directorate is planning on spending around R100-Million on capital works on the city's strategic economic assets and informal trading infrastructure...[Read more](#)



Durban port partially privatised

Africa's biggest harbour will be partly owned and operated by the Philippines' International Container Terminal Services Inc., a first for South Africa's national ports company. The company, ICTSI, has been selected as an equity partner to run and expand Durban Container Terminal Pier 2. Almost three-quarters of the freight volume moved through the eastern port goes through the terminal, accounting for 46% of South Africa's total port traffic, according to state logistics company Transnet...[Read more](#)



worldstainless

Webinar Report Back - Can stainless steel compete with plastic?

Worldstainless recently hosted a fascinating webinar that pitted two 'foes' against each other and where stainless steel scored a knockout! It's the age old debate fight between plastic and stainless steel and here at Sassda, we've always known the obvious answer to this question!

To shed light on the potential of stainless steel as a viable alternative to plastics, worldstainless Secretary-General **Tim Collins** who hosted the webinar showcased real-world examples. The webinar demonstrated how stainless steel products can effectively compete with their plastic counterparts. With their low or zero maintenance requirements, stainless steel products offer a safe and sustainable future.

Collins said; "Plastics have become an integral part of our lives, revolutionising various industries such as healthcare, packaging, and fast food. However, the dark side of our reliance on plastics has come to the forefront. With only 9% of waste plastics being recycled, a significant portion ends up in landfills, posing a severe threat to our environment."

"Moreover, humans ingest an average of 18kg of microplastics throughout their lifetimes, highlighting the extent of plastic pollution. As governments finally recognise the gravity of the global plastics legacy, an alternative material is emerging as a solution; namely stainless steel!"

The reason for this is that stainless steel possesses several features that make it a compelling alternative to

plastics. Firstly, stainless steel products can be cleaned and reused numerous times, reducing product costs over an acceptable number of reuses. This not only saves money but also minimises waste, mitigating the environmental impact associated with disposable plastics.

Hygiene is another crucial factor where stainless steel outshines plastics. Unlike plastics, stainless steel has no discernible impact or harm on living creatures, foodstuffs, or beverages. This makes it an ideal choice for applications in healthcare, where safety and cleanliness are paramount.

In addition, stainless steel boasts an impressive recycling rate, with 96% of end-of-life stainless steel being recycled to create new stainless steel products. This significantly reduces the environmental footprint of stainless steel and promotes a circular economy. Compared to other man made materials, stainless steel stands out as one of the most environmentally friendly options.

The rise of stainless steel as an alternative material comes at a crucial time. Governments and industries are beginning to recognise the urgent need for sustainable solutions to combat plastic pollution. Stainless steel offers a compelling alternative, with its reusable nature, hygienic properties, and impressive recycling capabilities.

Collins added; "As we confront the detrimental legacy of plastics, it is crucial to embrace materials that promote environmental responsibility and long-term sustainability. Stainless steel is poised to play a pivotal role in this transition, offering a cleaner, safer, and more sustainable future for generations to come".

To watch the
full webinar
click here



State of the Stainless Steel Nation

In his latest 'view from the top' Sassda Executive Director Michel Basson delves into the persistent issue of volatility within the various aspects of the South African economy. From fluctuating material prices and global supply disruptions to unpredictable local electricity supply, our State of the Stainless Steel Nation analysis examines how these uncertainties are creating a uniquely challenging set of circumstances for local stainless steel players...

1. How would you categorise the performance of the South African stainless steel sector in the last year? What is the state of the market at present?

As reported earlier this year, there was an unexpected increase in the use of stainless steel in 2021, locally as well as globally. We ascribe this to two influences. Keeping in mind that stainless steel is used in applications where cleanability, hygiene, and corrosion protection are required, many projects that were put on hold during the pandemic had to go ahead in 2021 as a matter of urgency.

As such, the increased use of stainless steel can be seen as the completion of many projects on temporary hold. On the other hand, many distributors started to replenish stock items as the expectations of market activity increased in 2021. It, therefore, did not come as a huge surprise when there was a lower demand for stainless steel in 2022 across the globe. The geographic markets of Europe and Africa

saw a decrease in growth from a spectacular 18% in 2021 to a growth of less than 2% in 2022.

In a sense, it was a period of consolidation, and the use of stainless steel was further dampened due to the spike in nickel prices in Quarter 2 of 2022. The uncertainty around electricity supply reached unknown levels in the latter part of the year with a serious impact on the manufacturing capacity of our members. This meant that any stainless steel that moved in the local value chain, moved at a snail's pace.

2. Please give some other meaningful stats relating to how the industry has performed?

The infographic on the next page shows some of the statistics that Sassda gathers and processes. In this case, we compare the apparent local consumption in the period June 2021 to May 2022 to the reported consumption for the 12 months from June 2022 to May 2023.

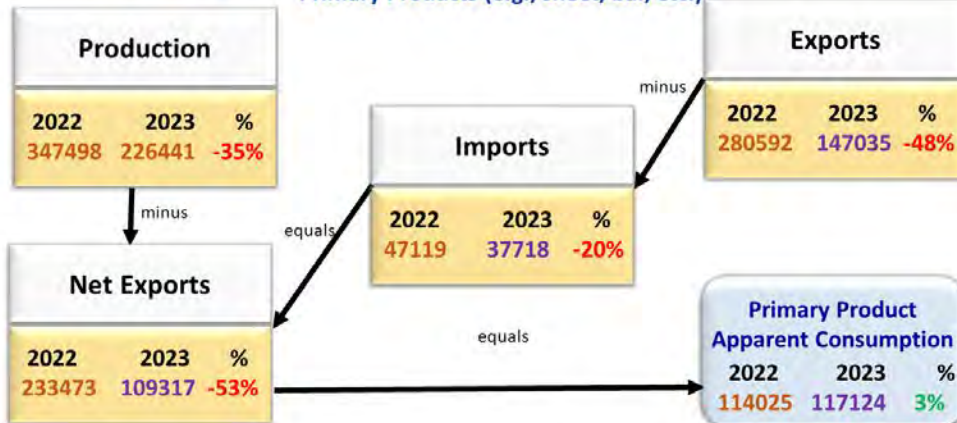
The upper right block indicates the change in local production which has reduced by 35%. It should be understood that the local use of stainless steel flat products is small in comparison with the total capacity of the mill, meaning that most of the production is intended for the export market. The limitations on the volumes that can be exported to Europe are showing their impact when the upper left block is studied where exports declined by 48%.

Imports also slowed for various reasons, including the requirement for 100% local content on infrastructure

Statistics 2022 vs 2023

Jun21-May22 vs Jun22-May23

Primary Products (e.g., sheet, bar, etc.)



programmes, as well as the exchange rate. This means that nett exports (exports minus imports) also reduced by 53%. Should nett exports be subtracted from the total production the answer yields the apparent local consumption for the period being investigated.

From this graphic, it can be deduced that the apparent local consumption of stainless steel has increased when compared to the previous 12 months. This is very encouraging although it may be a bit early to start any celebrations.

The Reserve Bank showed that after contracting by a revised 1,1% in the fourth quarter of 2022, real gross domestic product (GDP) edged higher in the first quarter of 2023

(January - March), expanding by an estimated 0,4%.

The Sassda infographic indicates an apparent growth rate that far exceeds the country's GDP growth and this is regarded as a strong positive indicator for our industry.

Sassda members are also more positive albeit that our 3-month forecast based on member confidence still remains below or at 50%. This is illustrated by our monthly measurement of member confidence below.

Members were fairly confident during the winter of 2022, but this confidence started to taper off in the last quarter which can be mainly attributed to the levels of loadshedding during that period combined with the uncertainty regarding the future state of electricity supply.



The new year started with an index of more than 50%, but the effects of Eskom's continued woes, the sudden slump in the exchange rate and increased interest rates pushed confidence levels down to 32%, which is lower than even during the dark days of the pandemic. It is therefore encouraging to see that members have once again increased confidence in the future of our industry. We hope this trend will continue.

“It is important to understand what Sassda means with the term “localisation”. Localisation means in this context that previously imported products will be replaced with similar or better products that are locally made competitively and sustainably

3. The South African stainless steel sector is currently under review from various quarters namely the: i. Steel Master Plan and the ii. Competition Commission's Steel Industry Review. What is Sassda's role in each of these and what is the current status of each?

Sassda has been part of the Steel Master Plan since its inception. Sassda officially forms part of the Local Demand Committee and has submitted initiatives on the localisation of beer kegs, cutlery, and hollowware. These initiatives are active and currently in process with a good prospects for success. It is important to note that the stainless steel sector is a small component of the overall South African steel industry. It can therefore be said, with some pride, that our sector is punching above its weight in the Steel Master Plan rollout.

This should also be considered when the results of the current Competition Commission review into the steel industry are published. In 2014, the South African steel industry was ranked 19th in terms of global crude steel production and was the largest producer on the African continent, producing more than half of the continent's steel output. In 2021, South Africa was ranked as the 32nd largest crude steel producer in the world, with an output of 5 Mt. This indicates that South Africa's competitiveness in the production and supply of steel has been declining.

The Steel Industry Inquiry was established in terms of Chapter 4A of the Competition Act No. 89 of 1998 and will examine whether or not there are any features or a combination of features in its value chain that impede, distort, or restrict competition in the South African steel industry.

It is also worth noting that a “market inquiry” is a general investigation into the state, nature, and form

of competition in a market, rather than an investigation of specific conduct by any particular firm. Sassda and its members adhere to a strict code of conduct regarding competitive behaviour, and it would be a surprise should the findings of the commission implicate serious anti-competitive behaviour in the stainless steel sector.

4. What are the biggest challenges facing the local stainless steel sector in the next 12 months, both global and local?

Volatility remains one of our biggest challenges. Whether that is the volatility in material prices, in global supply and logistics, or volatile local uncertainty in electricity supply. The volatility in our environment causes instability in the value chain and this impacts heavily on the effectiveness of the value chain. There is not much Sassda and the local industry can do to influence global stainless steel supply, logistics, and prices. There is also not much that the South African stainless steel sector can do to improve the current issues in Europe that are placing a damper on exports to Europe.

With exchange rates against any importation of stainless steel products, it can be an opportune time to fast track localisation and stimulate local demand for locally made products. We support and try to facilitate our members' efforts to diversify, increase productivity, and the innovative use of the capacities and skills available to the South African industry. In short, Sassda and its members understand very well that evolving and constant organisational change remains key to the survival of the industry sector.

5. What are the key global and local sectors that have the greatest potential to drive demand for South African stainless steel and what role does the renewed interest in the concept of localisation by government have to play in this regard?

Localisation is the key ingredient when the future growth of the stainless steel industry is discussed. However, it is important to understand what Sassda means with the term “localisation”. In this context, localisation means that previously imported products will be replaced with similar or better products that are locally made competitively and sustainably.

Sassda believes that competitive and sustainable localisation will lead to economic growth, improved value chain performance, and the creation of meaningful jobs. It can also be instrumental in breaking the chain of poverty that holds nearly half of our population captive.

A well developed local supply chain of specific stainless steel products can be extended to the export market and

will be able to compete globally in terms of price and quality. It has also been identified that the biggest potential export market would be the one closest to our country, Africa. South Africa has expertise in many areas that have lucrative market potential in Africa.

Healthcare and medical equipment, water treatment and storage, agricultural and agri-processing equipment, food and beverage, pharmaceutical, mining, as well as general processing plant and equipment jump to mind when thinking of sectors that can stimulate local and export demand.

Africa offers endless market potential, but it remains imperative that a strong and competitive industry be built on the back of intensive localisation. It is also foreseen that a strong and vibrant industry will stem the outflow of intellectual property, skills, and capacity from South Africa and offer opportunities to young professionals and entrepreneurs.

6. How has Sassda evolved against the backdrop of unprecedented local and global challenges that have faced, and continue to face, its members?

There was an evolution in the way that Sassda does things even before the pandemic forced change on industry and the community. It remains critical for Sassda to be accessible to members, the industry, and our partners to create awareness and promote the use of stainless steel in South Africa. For example, we have made our products accessible by turning all the Sassda official training programmes into world-class products that can be accessed by anyone globally via our virtual classroom settings.

Most of our member meetings have been accessible online since 2019. This intervention allowed Sassda



unparalleled access to industries and sectors we could not penetrate before. However, Sassda has also added new value in the way it intervenes on behalf of members when engaging with government. As an association our lobbying resulted in alleviating the industrial clampdown during COVID-19 by gaining permission to open up the stainless steel industry to a 50% level compared to the 30% allowed for other industries.

Another example would be when Sassda made submissions to the dtic regarding the ban on the exportation of scrap metals in 2022. The submission and communication with government resulted in the removal of stainless steel from the metals included in the Bill.

Sassda is constantly changing, and we try to keep ahead of the industry in terms of early adaption to circumstances to lead the way. Sassda is embarking on a drive to create more capacity within the association to be able to provide insight and services to members to facilitate change and in time adapt to new trends and potential markets.

7. What are some of the key projects/initiatives/programmes that Sassda will continue to champion in 2023?

Sassda cannot afford to be reactive to member and industry needs. The association has a strategic responsibility to lead and be the official and relevant mouthpiece of the local value chain. Sassda is currently in the process of upgrading all training manuals and presentations to reflect accurate and up-to-date information.

This process is also important as new technology such as laser welding is becoming more popular in our industry and needs to be included in our training products.

While we hope to keep on improving our products, services, and the delivery thereof, we will maintain our efforts to lobby the government on issues that impact our members and their future. It is important to mention that our lobbying process with government would never be negative. Our submissions contain statistics and data to support our view, but always remain flexible and open to alternatives towards a pragmatic solution. Sassda prefers to be a constructive partner towards a better South Africa.

The current localisation drives active in the Steel Market Plan are reaching critical milestones and will continue to receive our undivided focus. Sassda has been involved in getting stainless steel written into the national standards for roofing, cladding, and road safety equipment such as road barriers. We are embarking on a mission to get 3CR12 included in any future specifications for Eskom transmission towers as well as rural emergency bridges that are currently under discussion.

Michel Basson
Sassda Executive Director



BEYOND STAINLESS STEEL: EXPLORING NICKEL ALLOYS SUPPLIED BY MULTI ALLOYS A DIVISION OF EMVAFRICA.

In the world of metallurgy, the search for materials that offer performance, durability, and versatility is an ongoing endeavour. While stainless steel has long been an easy choice, there exists a remarkable alternative that surpasses its capabilities in various applications. Enter **nickel alloys** - a group of materials that exhibit exceptional corrosion resistance, high strength, and excellent heat resistance. In this article, we explore the benefits of utilising nickel alloys.

UNVEILING THE ADVANTAGES OF NICKEL ALLOYS:

Nickel alloys are engineered with a specific blend of nickel and other alloying elements to deliver unique properties. Here are some key advantages of incorporating nickel alloys into various industrial applications:

1. Superior Corrosion Resistance:

There are nickel alloys that possess exceptional resistance to corrosion in harsh environments, making them ideal for applications exposed to corrosive elements such as acids, alkalis, and seawater. This remarkable attribute ensures longevity, reduces maintenance costs, reduces downtime, and enhances safety in critical industries like chemical processing, minerals processing, marine engineering, and oil and gas.

2. High-Temperature Performance:

There are nickel alloys that exhibit remarkable strength and resistance to thermal stress, making them an excellent choice for high-temperature applications. With the ability to resist corrosion at high temperatures and maintain their mechanical properties, these alloys find extensive use in heat treatment, power generation, and petrochemical industries, where operating conditions can be extremely demanding.

3. Excellent Mechanical Properties:

There are nickel alloys that offer a unique combination of high strength, ductility, and toughness. This makes them highly suitable for applications that require structural integrity and reliability under heavy loads, such as in manufacturing pressure vessels, heat exchangers, and turbines.

4. Versatile Applications:

The capability of nickel to accommodate a wide array of alloying elements has allowed the creation of alloys that are versatile across a range of process conditions. These materials have applications in diverse industries, by judicious selection these grades can be cost-effective solutions and provide the necessary reliability and performance.

Multi Alloys: Creating Value through Experience.

When it comes to sourcing high-quality nickel alloys, Multi Alloys stands as a leading South African supplier. With over 25 years of experience, their effective supply chain systems ensure a streamlined operation leading to enhanced efficiency, and cost savings for their clients, whilst minimising risk.

With their expertise in the field and a wide range of alloys available, Multi Alloys offers a reliable and comprehensive solution to meet the demanding needs of different industries. Their commitment to quality, strict adherence to international standards, and extensive product knowledge make them a trusted partner for businesses seeking top-notch nickel alloy materials.

As industries strive to push the boundaries of performance and durability, nickel alloys have a role to play. The exceptional corrosion resistance, high-temperature capabilities, excellent mechanical properties, and versatility of the various nickel alloys, make them indispensable in numerous industries. With its commitment to excellence and a vast range of nickel alloy offerings, Multi Alloys stands at the forefront of meeting the growing demand for these exceptional materials. Embrace the capabilities of nickel alloys from Multi Alloys and unlock possibilities beyond stainless steel.



Please visit our website at multialloys.co.za for more information



COMBINING AS THE ULTIMATE ONE-STOP SUPPLIER OF ALLOYS, STAINLESS STEEL AND VALVES



Multi Alloys has earned a reputation as one of South Africa's leading suppliers of duplex stainless steels, nickel alloys and other niche products. As a specialist division of EMVAfrica, Multi Alloys brings a highly skilled team, extensive stock holding, and ability to source precisely what is required from our global supply partners. We build on three decades of experience and our unique industry knowledge to support our customers: offering full solutions from contracts to logistics, and the widest range of superior quality special alloys, stainless steel and valves.

ADDING VALUE THROUGH EXPERIENCE

 **MULTIAlloys**

SA rail industry strongly advised to embrace stainless steel amidst crisis



South Africa's once proud 22 000km rail network, which historically accounted for 80% of Africa's total rail infrastructure, is currently grappling with a dire crisis, which includes vandalism and the theft of existing infrastructure.

In response to this critical situation, Sassda member Columbus Stainless is taking significant strides to promote the use of stainless steel in the struggling rail sector. With the urgent need to revitalise the rail network, the company is actively bridging the knowledge gap among engineers and industry professionals.

Columbus Market Development Manager Lerato Mashigo says, "Reviving our once proudly South African rail freight





network is of special significance, not only because it can streamline the stainless steel industry's import and exports supply chains but also because it serves as a key demand sector for the supply of local stainless steel into strategic rail projects."

Mashigo also emphasises the vital role of engineers and the need for them to be equipped with specialised knowledge of stainless steel for rail applications to allow for the selection of the right materials. The goal is therefore to cultivate a knowledgeable industry that recognises the inherent value of stainless steel and other viable alternatives.

She explains; "In light of this, we have identified a unique opportunity to advocate for the adoption of stainless steel in the rail sector by engaging with industry professionals and members of the South African Society of Railway Engineering (SASRE). We aim to provide tangible demonstrations of the advantages and benefits associated with using stainless steel in various rail-related projects."

Significant investment required

Speaking at a recent SASRE event, Mashigo, together with colleague Columbus Stainless Senior TCS & Product Quality Manager Helena Rossouw, emphasised the significance of investing in rail infrastructure. They proudly highlighted the local success and international recognition earned by the 3CR12 stainless steel grade, particularly in the rail and automotive industries. This robust stainless steel variant has



gained considerable traction in the US market and played a pivotal role in the South African coal wagon industry, thanks to its exceptional corrosion (abrasion) resistance and impact strength.

During the overview of the advantages of using stainless steel in rail applications, the all-women team from Columbus Stainless delved into the various families of stainless steel, providing practical examples of its superior performance compared to mild steel.

Rossouw points out, "3CR12 stainless steel has proven highly successful in coal handling applications, lasting over 30 years (and counting) without the need for additional maintenance or coating. In contrast, coal units made of mild steel require regular maintenance and coating, leading to frequent replacements."

Minimal maintenance maximum benefits

This in turn highlights the significant advantage of stainless steel in terms of Life Cycle Costing, dispelling the common misperception around the upfront cost of stainless steel and the fact that mild steel is chosen over stainless steel based solely on initial cost.

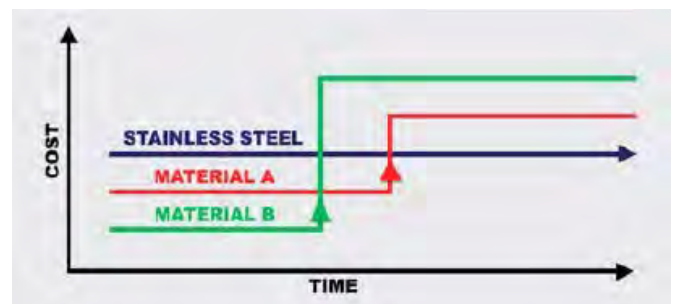


“Many people tend to focus on the initial cost of the material without fully considering the associated maintenance and downtime expenses. Stainless steel emerges as a more economical choice when life cycle costs are thoroughly considered,” explains Rossouw.

To vividly illustrate the point, the presentation included a diagram that underscored the hidden costs incurred due to maintenance and production loss caused by downtime with mild steel. In stark contrast, stainless steel, with its self-repairing passive layer, eliminates the need for active maintenance and re-coating, making it a far more viable option in the long run.

Therefore, despite initial cost perceptions, stainless steel’s remarkable durability, corrosion resistance, and impact resistance position it as the superior choice for various rail applications. Furthermore, different grades of stainless steel cater to specific needs, making it an ideal material for transporting different media. For example, 304 stainless steel proves suitable for transporting water, while 316 stainless steel excels in transporting more corrosive media.

steel will foster the growth of a knowledgeable and forward-looking rail industry. With a steadfast focus on responsible and enduring investments, our industry can play a pivotal role in creating a resilient rail network poised to serve the country for generations to come” he concludes.



**Life Cycle Costing = Net present value (capital cost)
+ Operations cost + Maintenance cost
+ Replacement cost – Residual value**

A critical juncture

The collaboration between Columbus Stainless and SASRE marks a significant turning point for South Africa’s rail industry which is at a critical juncture, facing challenges that demand immediate attention and innovative solutions.

Against this backdrop, Sassda Executive Director Michel Basson emphasises the long-term viability of stainless steel in South Africa’s flagging rail sector. “Amid South Africa’s pressing need to revive its ailing rail network, the rail industry’s collaboration with organisations like Columbus Stainless is considered a crucial step toward identifying sustainable solutions.

“Intensifying the awareness of the benefits of stainless

Additional Reading

1. www.citizen.co.za/news/r60-billion-crumbling-rail-network
2. <https://businesstech.co.za/news/government/676093/ramaphosa-turns-his-attention-to-south-africas-other-state-owned-crisis>
3. www.reuters.com/world/africa/kumba-iron-ore-cuts-output-forecast-south-africa-rail-crisis-2023-02-21
4. www.dailymaverick.co.za/article/2021-04-20-what-broke-south-african-rail-and-can-it-be-fixed
5. <https://www.transport.gov.za/rail#:~:text=Welcome%20to%20Rail%20Branch,staff%20complement%20of%2018%20207>



NO MATTER HOW SMALL

**...YOUR PROJECT IS, WE'VE
GOT THE STAINLESS STEEL
FASTENERS YOU NEED.**

**WE HAVE THE BIGGEST SELECTION OF
ST/ST FASTENERS IN SOUTH AFRICA.**



fastenright
Your Stainless Steel Bolt and Nut Experts

T: 021 534 9095 | E: sales@fastenright.co.za | 27 Mail Street, Western Province Park, Epping, Cape Town

www.fastenright.co.za



Rwanda on the rise



Rwanda is a country with a promising future, as it pursues various capital projects aimed at driving growth and prosperity. With a population of 13 million, of which the vast majority below the age of 25, its economy has the opportunity to benefit significant future consumer spending income.

In addition, the country has undergone significant improvements over the years, making it one of the fastest-growing nations in Africa with an annual growth rate of 7.5% since 2007. With an unemployment rate of 13.3%, the country enjoys a GDP of \$11-Billion (Source: World Bank) and a B+ stable rating.

Overall, Rwanda is a low-risk region with the lowest debt ratio in the region as well as stable credit ratings and a solid currency. It's also one of the safest countries for solo travellers, making it an ideal investment destination. Rwanda's economy is particularly business-friendly, with an impressive ranking of second for ease of doing business in Africa and first for government transparency (Source: Rwanda Development Board July 2023)

Rwanda is also IT-ready, boasting a 97% 4G LTE network coverage and ranking first in the East African Community for network readiness. Additionally, it ranks 5th in Africa and has more than 7 000 km of internet fibre, making it an ideal investment hub.

Ease of doing business

Rwanda has developed an investment-friendly atmosphere by implementing business-oriented rules, supporting priority sectors, simplifying processes, and expressing its commitment to foreign proprietorship, making the country an attractive destination for investors.

The country also opens access to African and global markets through rigorous free trade agreements and serves neighbouring markets such as Uganda, Burundi, Tanzania, and the DRC through regional connections.

Investors looking to invest in Rwanda can enjoy diverse incentives through a new Investment code.

An international company that invests \$10-Million or more and sets up its headquarters or regional office in Rwanda, is eligible for a preferential corporate income tax rate of 0%.

Investors operating in mass transport, energy production, manufacturing, ICT & e-mobility are also eligible for a preferential corporate income tax rate of 15%.

Registered investors who invest an equivalent of \$50-Million and contribute at least 30% of equity are eligible for a corporate income tax holiday of seven years. Export incentives also exist, based on meeting export threshold.

Talent attraction and immigration incentives, include a two-year entrepreneurship visa for start-ups, a two-year talent visa for qualifying international students, and the option for an investor who invests \$250 000 to recruit three foreign employees without demonstrating that their skills are lacking.

Investors looking to benefit from attractive incentives in the construction, general manufacturing, and agro-processing industries can also explore fiscal and non-fiscal incentives.

Investment opportunities in Rwanda

- **SUSTAINABILITY-** The Kigali Green City Project is a sustainable development for middle-income residents and comprises green spaces, efficient energy, local sourcing, and circular living. The 16-ha pilot size is expected to start in mid-2023, while the whole city is estimated to be 600ha. The project will consist of 680 housing units which require an estimated investment of \$86-Million, generating sales revenue and commercial rentals such as shopping malls and leisure facilities.

Investors can benefit from the fact that the feasibility study has been completed in Sept 2021. Additionally, the project secured EUR40-Million in funding from the government of Germany through the KFW Development Bank, with detailed designs set to be completed in the second half of 2023.

- **KIGALI INNOVATION CITY** is a 61-hectare mixed-use development project that aims to build Rwanda as a pan-African knowledge economy. The city combines university campuses, research and development facilities, Grade A office spaces, student housing, science and technology museums, retail, and hospitality. The city has already attracted a community of highly skilled students from more than 40 African countries.

Currently, project development activities are ongoing, including the design and construction of the first mixed-use building set to be completed in 2024. The city has already secured three anchor tenants, including Carnegie Mellon University - Africa.

Sustainable packaging is another important investment opportunity in Rwanda. The project involves investing in recycling plants and sustainable packaging plants to create carton and biomaterial based sustainable packaging solutions.

Various investments are available depending on the size of the project. The Plastic Recycling Plant is estimated to generate \$14-Million in annual revenue, using local waste collection systems. The Paper Recycling Plant is expected to generate \$15-Million in annual revenue and a Biomaterial-Based Sustainable Packaging Plant is estimated to yield \$15-Million in revenue per annum. A Carton Packaging Plant for branded tea exports is another initial opportunity to target 5 000 TPA paper cartons and tea bags estimated to generate \$15-Million in revenue per annum. This project is a fully private investment.

- Rwanda is set to see exciting developments in the **AGRICULTURAL AND AGRO-PROCESSING** sectors, with projects such as the Gabiro Agro Business Hub and the Gako Meat Project. The former will cover around 10 000 hectares of fully irrigated land and offer lease opportunities to investors, with a focus on job creation and improving food security through increased crop production. Meanwhile, the Gako Meat Project is a substantial operation spanning 5 919 hectares and sets out to modernise the agriculture industry in the country. To complete the project, an investment of \$63-Million will be required.



- In the **HEALTH** sector, Rwanda presents a wealth of opportunities for investment, including imaging clinics, equipment manufacturing, and medical consumables manufacturing. The country has a strong existing healthcare system that covers 13 million people, with a multi-layered administrative structure overseen by the Ministry of Health and the Rwanda Biomedical Centre.
- Rwanda's **MINING** industry is also primed for investment, with the country seeking to add value to its mineral output through processing. While the country already has a tin smelter, a gold refinery and a tantalum refinery under construction, there are numerous opportunities to establish processing plants for other minerals such as tungsten, lithium, and gemstones.
- Rwanda's **CONSTRUCTION** industry has shown steady growth of 9% over the past decade and is expected to continue on an upward trend with a projected growth of 10% over the next decade. This growth will primarily be driven by major commercial construction projects such as the New Bugsera Airport, Kigali Innovation City, Kigali Green City, and major affordable housing



projects. Investors looking for opportunities within the construction sector can explore investment in the low exploitation and processing of industrial materials necessary to meet the demand for construction materials such as tiles, slab sculptures, paints, bricks, and concrete aggregates.


AN NDE SOLUTION IN EVERY LINK OF OUR VALUE CHAIN IT'S IN OUR DNA

The **Helix Bridge, Singapore**,
is fabricated from approximately
650 tonnes of duplex stainless steel.

It is **the world's first bridge** designed
using the double helix structure
inspired by DNA.

www.nde.co.za

NDE
CORROSION RESISTANT MATERIALS AND SOLUTIONS

A large, intricate stainless steel bridge structure with a double helix design, resembling a DNA molecule. The bridge is set against a teal background with a faint DNA helix pattern. The text is overlaid on the left side of the image.

The beauty lies in the design,
its genius... in the structural material.

Frank Gehry's architecture is unrivalled in its simple complexity. The Louis Vuitton Foundation in the Bois Du Boulogne, Paris is one of the most remarkable feats of architectural engineering. What made it possible was the use of structural, high-strength duplex stainless steel to support the unique glass sails. As you can see, stainless steel doesn't have to be bright to be brilliant!

Stainless Steel. It's Simply Brilliant.

Call 011 883 0119 or see sassda.co.za. Your complete stainless information source.

The 'acid test' when it comes to effective passivation



Post-fabrication treatment of stainless steel products, or damaged and contaminated surfaces remains critical to ensure that the material lives up to customer expectations. Stainless steel surfaces remain in pristine condition due to a very thin, tenacious chrome-oxide film that develops uniformly and continues when the material is exposed to oxygen in the environment. This film is stable and, most importantly, passive.

The passivity makes stainless steel surfaces inert and, as such, it does not readily react with the environment, even when in a corrosive environment. This property comes from the chrome content in the material since the more chrome stainless steel contains, the stronger the passivity and the corrosion resistance. The passive film is not a coating that needs to be maintained. It forms naturally and all it requires to remain strong, is unimpeded access to oxygen, simply meaning that the surfaces must be kept clean.

Pickle we must

When stainless steel is produced at a mill and ready for dispatch, the passive film will be in optimum condition and pristine. However, along the process of the manufacturing value chain, a lot of things will happen to the material that will damage and impair the passive layer.

This includes multiple instances of transport and handling, exposure to ferrous and carbonaceous contamination; exposure to polluted atmospheres and the

activities of fabrication such as cutting and forming. It is important to treat the surfaces after fabrication to ensure the removal of all embedded iron and metallic debris and dirt.

This will allow chrome to have free access to oxygen to build an effective passive film.

Some fabrication activities do not only impact the integrity of the passive film but also affect the material underneath the passive film and close to the surface. Heat treatment and welding are such examples. At high temperatures, heat oxide layers will form near the surface of the material. These layers are chrome depleted and cannot build and sustain a protective passive film. It needs to be removed to expose fresh material that can form a proper passive film.

Heat scale and most other surface defects can be removed by either mechanical methods or chemical



methods. However, tests have indicated that chemical methods yield better results. It has been proven that the pickling process renders the most corrosion-resistant surface of all treatment methods.

Pickling normally refers to an acid mixture containing nitric acid and hydrofluoric acid that will remove the oxide scale and the underlying chromium-depleted layer. These acid mixtures are hazardous and must be handled with due care and disposed of correctly. As pickling would dissolve the stainless steel top surface, it must be carefully executed to the correct parameters.

Pickling can be performed by immersing the stainless steel part in a bath or by spraying the surface. Pickling products can also be applied locally in gel or paste forms. Irrespective of how pickling is conducted, it remains a necessary and critical step in surface restoration and ensuring the optimum performance of components and products in harsh environments.

To passivate or not to passivate?

The passive film forms naturally if there is unimpeded access to oxygen in clean and dry conditions. Pickling produces clean surfaces with a dull grey, matte finish that passivates spontaneously in the correct conditions. According to studies done by Outokumpu chemical passivation is rarely needed for improved corrosion resistance and is not required if the stainless steel has been properly pickled. On the other hand, passivation is an effective way to clean stainless steel that has not been pickled.

Chrome to the rescue

The answer to whether to passivate therefore lies in the conditions for natural passivation, the nature of the application, and the requirements of the end-user. The natural passivation process starts almost immediately once chemical contact is established between the environmental oxygen and the chrome contained in the material.

It is worth noting that the more chrome, the faster and stronger the passive layer will develop. It is also important to understand that all chemical processes on stainless steel such as cleaning, pickling and passivation, are governed by international standards.

The standard that the South African industry adheres to in terms of cleaning, descaling and passivation of stainless steel parts, equipment and systems is ASTM A380/A380M-13. This standard allows for nitric acid based, as well as citric acid based methods for cleaning and passivation of stainless steel. The standards ASTM A967 and AMS 2700 states citric and nitric acid passivation to be effective for stainless steel parts.

Citric acid passivation

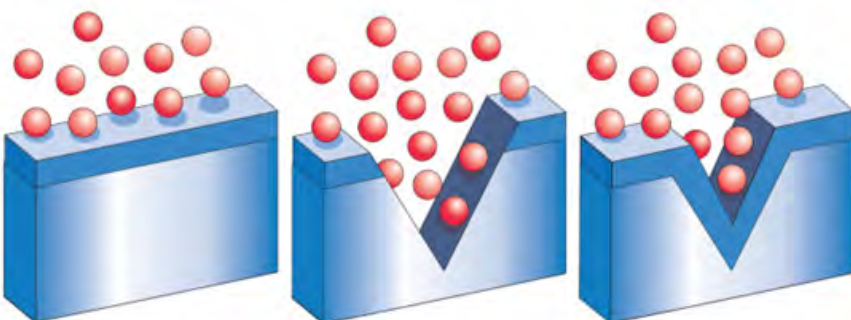
Citric acid passivation is the newer of the two processes and is also less used in the local industry. This technique was originally developed by the Coors Brewing Company to passivate the internal surfaces of beer kegs. Since citric acid is generally recognised as safe by the American FDA, it can be used safely in food and beverage applications.

Citric acid is the same non-toxic, biodegradable natural acid found in citrus fruits, making its use in passivation an environmentally friendly alternative to nitric acid. It also has fewer handling concerns than nitric acid. Unlike nitric acid, citric acid can be disposed of with minimal requirement of waste treatment.

Citric acid can passivate a wider variety of stainless steel alloys than nitric acid passivation. A citric acid passivation bath also takes far less time than nitric acid, speeding up the cleaning process considerably. However, for all these benefits, citric acid passivation is considerably more expensive, which is why many choose nitric acid.

According to ASTM A967, there are five different citric acid passivation methods:

- **Citric 1:** This solution has a strength of 4-10 w% citric acid, at a temperature of 60- 70° C and 4 minutes minimum exposure time.
- **Citric 2:** This solution has a strength of 4-10 w% citric acid, at a temperature of 50- 60° C and 10 minutes minimum exposure time.
- **Citric 3:** This solution has a strength of 4-10 w% citric acid, at a temperature of 20- 50° C and 20 minutes minimum exposure time.



- **Citric 4:** This covers other combinations of temperature, time, and concentration of citric acid with or without chemicals to enhance cleaning, accelerants, or inhibitors capable of producing parts that pass the specified test requirements.
- **Citric 5:** This covers other combinations of temperature, time, and concentration of citric acid with or without chemicals to enhance cleaning, accelerants, or inhibitors

capable of producing parts that pass the specified test requirements, but with the immersion bath to be controlled at pH of 1.8 - 2.2.



Nitric acid passivation

Nitric acid passivation is the traditional method of passivation and has been used since the 1960s and is also the most used in the local industry. However, lower alloyed grades of stainless steel risk etching during the passivation process. This can be limited by adding sodium dichromate to the nitric acid, using a higher nitric acid concentration, or heating the nitric acid to a higher temperature.

Nitric acid chemistries with high oxidising potential are best, as the passive film formed on the surface forms faster and is more effective, thereby reducing the potential for etching. It has been stated that although nitric acid passivation is less costly to use, more pronounced environmental hazards exist. Nitric acid is naturally hazardous and emits toxic fumes. It also requires special handling and disposal, making it more expensive than using citric acid passivation in some situations.

According to ASTM A967 five different nitric acid passivation methods:

- **Nitric 1:** The solution consists of 20-25 v% nitric acid and 2.5 w% Sodium Dichromate, at a temperature of 45 -55 C with 20 minutes as minimum exposure time.

- **Nitric 2:** The solution consists of 20-45 v% nitric acid, at a temperature of 20 -30° C with 30 minutes as minimum exposure time.
- **Nitric 3:** The solution consists of 20-25 v% nitric acid, at a temperature of 50 -60° C with 20 minutes as minimum exposure time.
- **Nitric 4:** The solution consists of 45-55 v% nitric acid, at a temperature of 45 -55° C with 30 minutes as minimum exposure time.
- **Nitric 5:** This covers other combinations of temperature, time, and acid with or without accelerants, inhibitors, or proprietary solutions capable of producing parts that pass the specified test requirements.

From a purely environmental standpoint, citric acid passivation is a far better option. There are fewer handling concerns and less to worry about when it comes to disposal. But there are cases where nitric acid passivation works better. The risk of flash attack or the potential for etching the surfaces is elevated with nitric acid, however, taking the precautions mentioned earlier lessens the risk. Flash attack can occur with citric acid too, but at a much lower risk.

Early citric acid formulations suffered from organic growth issues, but modern formulations include biocides to mitigate the issue. Citric acid removes only the free iron on the surface, whereas nitric acid removes some metals on the alloy itself. Citric acid is more expensive since it is naturally derived and can't be created in a laboratory. This results in a higher chemistry costs, even as it saves money in just about every other area, including labour, equipment, maintenance and disposal costs.

Activity	NITRIC PASSIVATION	CITRIC PASSIVATION
Handling	Special protective handling required	Less dangerous to use
Hazards	<ul style="list-style-type: none"> • Toxic and corrosive vapours produced • Special disposal and neutralisation are required • Dangerous at high temperatures 	<ul style="list-style-type: none"> • No toxic vapours or gasses • Easier safe disposal • Safe at elevated and high temperatures
Ventilation	Required for a safe environment	No requirement
Process Time	20 minutes and longer	5 to 20 minutes
Temperature	Elevated and higher temperatures are required for most uses	Most applications require room temperature only
Effect on Equipment	<ul style="list-style-type: none"> • Corrosion of non-stainless steel components • Degradation of non-metallic components 	No corrosion or degradation
Cost	<ul style="list-style-type: none"> • Lower cost chemicals • High disposal and neutralisation costs • High equipment maintenance costs 	<ul style="list-style-type: none"> • High cost chemicals • Low disposal costs • Low maintenance of equipment costs

Stainless-Steel application solutions fill the gap

As a local manufacturer and supplier of specialised abrasives, we have been a partner to the Stainless-Steel Industry since 1981.

Choosing the correct abrasives for stainless steel fabrication is key. Not only does the application require premium products that offer optimum results, but non-contamination of the material is critical.

We offer a complete abrasive range manufactured free from iron, sulphur, and chlorine that will not contaminate stainless-steel during application, or cause any impairments to the metal, such as corrosion, pitting corrosion, or a reduction of fatigue strength.

Our cutting range boasts both Conventional and Slimline cutting discs, each providing results dependent on required application and finish.

Slimline discs are available in diameters from 115mm up to 230mm. Reinforced for safety, they are particularly suited for applications on thin-walled metal sheets, profiles, and pipes, as well as reinforced steel, small stainless-steel cross-sections, and corrosion-resistant or acid resistant stainless steel.

For maximum cutting ability and longevity, cutting discs for stationary cutting machines in chop cut applications are available in different specifications starting from 300mm in diameter.

When it comes to stock removal, Superflex grinding, and flap discs combine longevity with the best cutting ability through the perfect combination of Aluminium Oxide and Zirconium Aluminium Oxide grains.

Flap discs are versatile products that can be used for both stock removal, or finishing, - particularly useful where a smooth and seamless finish is required after a welding operation. The Superflex Premium Inox, specifically

manufactured for stainless steels, exotic heat sensitive metals, and alloys ensure the ultimate surface finish. Manufactured from high-tech self-sharpening Ceramic grains, these flap discs offer both excellent stock removal and a cool grind.

For grinding applications on larger workpieces, where maximum stock removal is required, we offer various products within our precision grinding ANDOR range that include shaped resin-bonded and vitrified wheels suited to internal, surface, and external grinding applications. Where application requires precise stock removal with small work areas, tungsten carbide burrs and mounted points offer the perfect choice.

The latest addition to our range includes non-woven abrasives, suited for finishing and surface preparation applications. Manufactured from uniform distributed abrasive grains that are fused to a three-dimensional support of nylon fibres, a constant and consistent finish throughout the working process and product's lifetime is achieved.

Applications with non-woven abrasives will not change or manipulate the geometry of the workpiece, as they conform perfectly to the workpiece.

Superflex buffing wheels and polishing compounds are specifically manufactured to rework this matt finish to a mirror finish.

For a custom abrasive solution, contact one of our Application Specialists today

Tel: +27 11 271 6400,

Email: info@grindtech.com

Website: www.grindtech.com

super/flex® - Stainless steel fabrication partner



No burn | No discoloration | No contamination

Real world examples of the true value of Life Cycle Costing

Most users, especially fabricators, of stainless steel will know stainless steel is an alloy of mainly iron and chrome that renders a group of materials with special properties over and above the fact that it is corrosion resistant. It is a durable family of steels that makes stainless steel suitable for virtually any application. However, we often find ourselves with a potential market or customer that resists stainless steel based on the initial purchase price of the material.

We cannot argue this fact, but we also accept that you have to invest more for lasting quality. We accept this fact when buying a house, a car, or a microwave. So why do we not accept this fact when doing material grade selection for a product or project?

Life Cycle Costing is crucial for sustainability

With this in mind and given that our footprint or impact on nature is a major current concern from a sustainability viewpoint, it might be worth investigating the true cost of stainless steel and some of the competitor metals over the life span of a project or product.

There is a technique to determine the true cost of a material over the complete life span of a project. This includes initial and all future costs related to the material over a given period. Determining the true cost of a project is important since we have an obligation to inform the end-user to as what the true cost of the proposed project will be.

We have the responsibility of being honest by disclosing the true financial commitment required from the end-user. This is important, because the life span of a project can be 100 years or even longer. The Canadian National Archives



was designed with an expected lifespan of 500 years for example. This means that a small mistake in the initial choice of material can lead to expensive future costs. This will limit future options and will burden future generations. When we are responsible for sustainability our thought process should be focused on long-term solutions and the impact thereof.

How Life Cycle Costing impacts on sustainability

Life Cycle Costing (LCC) is the process of estimating how much money you will spend on an asset over the course of its useful life, not just the initial costs (the cost usually displayed on the quotation). LCC involves the tracing of costs and revenues of a product over several calendar periods throughout its life cycle.

LCC provides a method of assessing the costs that occur throughout a project's lifespan, from raw material

procurement, fabrication and construction, through use and maintenance, to end-of-life. In so doing, it provides a more robust insight into long-term costs and savings, compared to ROI-based calculations. The full cost of a project would include projections for items such as:

- future rates of interest and inflation
- designed or expected maintenance intervals and costs (both material and labour)
- desired service life

When assessing materials costs consideration should be given to long- and short-term factors such as:

- initial investment
- maintenance level and frequency
- downtime effects
- production losses, repair, replacement
- other operationally related costs such as manpower and energy consumption

The way that the calculation of the total LCC is formulated allows for all associated future costs to be calculated and expressed in present monetary values as a comparative

benchmark. LCC uses the standard accounting principle of discounted cash flow. Costs of maintenance and associated downtime can outweigh the initial material costs. From a sustainability viewpoint it makes sense to calculate a full life cycle cost assessment.

LCC is the sum of acquisition cost, initial fabrication and installation costs, operational and maintenance costs, lost production due to down time, as well as replacement costs. However, at the end of the project life, all material involved and still available can be retrieved for re-use or recycling. The value of this can therefore be subtracted from the total cost.

$$LCC = AC + IC + \sum_n^N \left(\frac{OC}{(1+i)^n} \right) + \sum_n^N \left(\frac{LP}{(1+i)^n} \right) + \sum_n^N \left(\frac{RC}{(1+i)^n} \right) -$$

When using stainless steel, the end of life value becomes very important. In architectural installations it is estimated that around 92% of the original material will be available for recycling. In the case of coated carbon steel or galvanised installations, this figure is closer to values between 62% and 68%. Therefore, our industry can proudly say that more than 75% of all new stainless steel material comes from recycled sources.

Sassda's LCC Toolbox:

Case Study 1: The Residential Fence

A middle income family needs to install a security fence with the following options:

1. A carbon steel construction to be powder coated
2. A 3CR12 construction to be powder coated
3. A 3CR12 construction with no coating and allowed to age naturally.

Some research into the detailed costing provided the following information.

3CR12:	Mild steel:
Mass = 75 kg;	Mass = 78kg;
Material costs = R2100;	Material costs = R1620;
Powder coating = R2250;	Powder coating = R2340;
Fabrication cost = R750;	Fabrication costs = R540;
Installation costs = R120;	Installation costs = R120;
Maintenance painting = R375;	Maintenance painting = R1404;
Maintenance period = 3 years,	Maintenance period = 3-year,
Scrap value of R500 per panel	Scrap value of R0 per panel

The Sassda application yields the results shown on the right with the highlights being that the uncoated 3CR12 version will be 68% lower in cost over the 15 years life span. Even if the 3CR12 is powder coated it would still be 30% less expensive than the coated carbon steel version.



Description	Steel Painted	3CR12 coated	3CR12 uncoated
Material costs	1620	2100	2100
Fabrication costs	660	870	870
Other installation cost	2304	2250	0
Initial costs	4584	5220	2970
Maintenance	4022	1074	0
Replacement	0	-250	-250
Lost production	0	0	0
Material related	0	0	0
Operating costs	4022	824	-250
Total LCC	8606	6044	2720

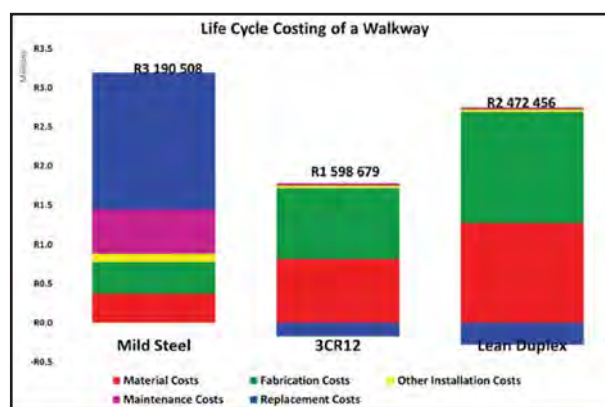
Diagram showing cost differences: 30% difference between Steel Painted and 3CR12 coated, and 68% difference between 3CR12 coated and 3CR12 uncoated.

Case Study 2: The Hydrometallurgical Walkway

At a hydrometallurgical plant in Chile material must be selected for a walkway across very corrosive areas in the plant. Service life is 30 years, and three possible material types are being suggested for use:

- 1. Mild steel** - Cheapest option, but the material is to be coated. This would require maintenance and repairing the protective surface every four years.
- 2. 3CR12** - Unpainted. Every 15 years clean the surfaces with a high-pressure water.
- 3. Lean Duplex** - Expensive material, but with exceptional mechanical and corrosion characteristics. Therefore, the material can be gauged down, meaning less kilograms will be required giving reduced initial material cost.

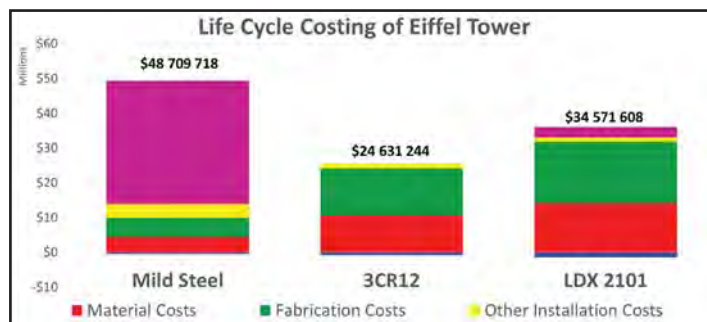
Once again, the results favour the use of 3CR12 with the utility grade showing a 50% reduction in life span costs compared to the mild steel option. Even the Duplex grade with very high initial costs display a reduction of 23% compared to the mild steel option. Take note of the impact of end of life value in the graphic depiction of the cost analysis.



Case Study 3: The Repeat of the Eiffel Tower

Imagine you need to reconstruct the Eiffel Tower with a design life of 100 years. You have the following options: The potential grades would be a 3CR12, a duplex 2101, and mild steel like the material used on the existing tower. The mild steel will be painted with the current maintenance schedule. The 3CR12 will be allowed to form a surface patina. Therefore no maintenance will be required with 3CR12. The duplex material will always be maintained with a high-pressure waterjet every 20 years rendering the new tower shiny.

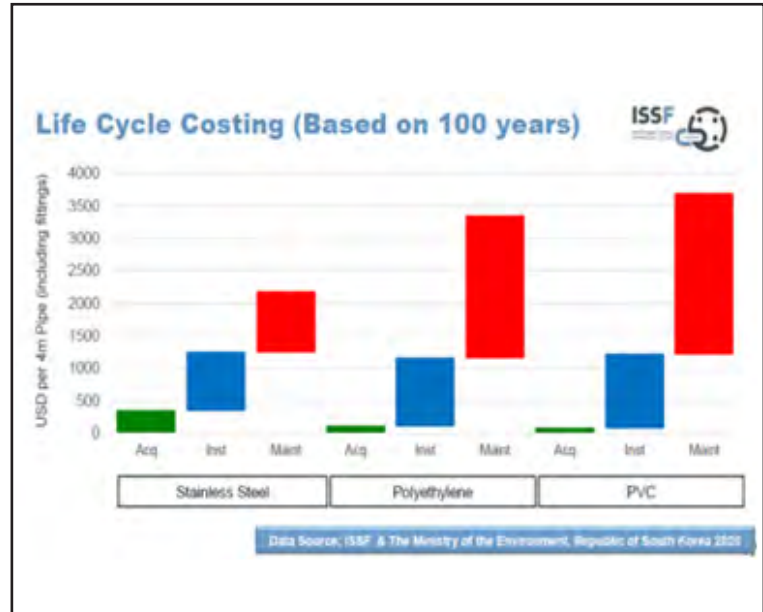
It comes as no surprise that the life cycle costs of the 3CR12 option is around 50% of the mild steel cost. The Lean Duplex version registers at around 77% of the mild steel cost.



Case Study 4: Drinking Water solutions

The first three case studies showed the cost efficiency of stainless steel, especially 3CR12, against competitor materials. However, stainless steel can even compete against specific plastics used in drink water applications with a cost advantage over the life span. ISSF studies show an analysis of materials used in the pipework utilised in bringing water from the bulk supply to the end-user.

The life span used in this exercise is 100 years and based in the USD costs per 4m of installation pipework including fittings. The comparison was done between stainless steel, polyethylene, and PVC. The results speak for itself with stainless steel calculated to be at USD 2,172.00 per 4m length. The result for polyethylene stands at USD 3,340.00 and for PVC at USD 3,690.00 for the same length.



Stainless steel remains Simply Brilliant

In virtually all applications stainless steel shows substantial LCC ife benefits.

A - Acquisition Costs:

Stainless steel contains more than 70% of recycled material.

B - Fabrication and

Installation: Stainless steel offers ease of fabrication and the mechanical properties allow for lighter structures.

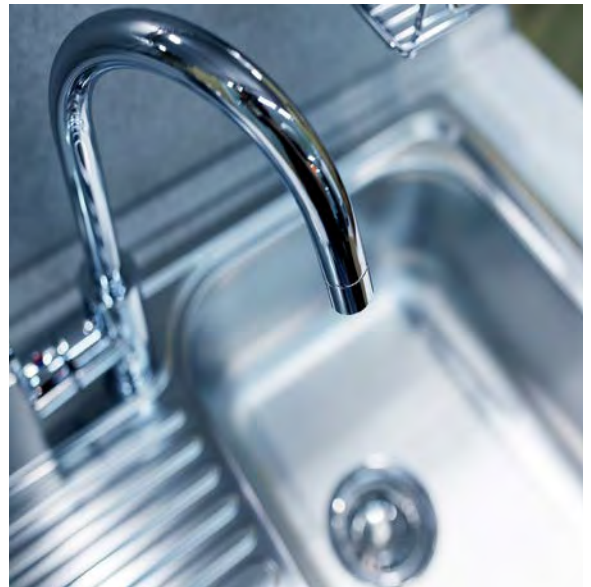
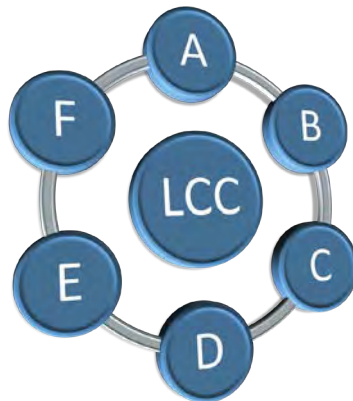
C - Operational Costs:

remains lower due to the durability of the material.

D - Lost production Costs: The durability of stainless steel also causes less down time and thus a reduction of related costs.

E - Maintenance Costs: Durability and less downtime leads to lower maintenance costs over and above the fact that stainless steel implies lower maintenance.

F - Recycling: The material complies with the standards for sustainability. Due to the high end of life material recovery rate, there is implied savings. Stainless steel is 100% recyclable.





How to enhance the beauty of stainless steel

What is stainless steel?

Stainless steels are inherently corrosion-resistant materials that do not need additional surface protection like painting, galvanising or anodising to enhance their appearance and lifespan.

Stainless steel is protected by a thin surface layer. The strength of the layer and thus the protection, is generated from chromium in the stainless steel and oxygen from the air. Many grades of stainless steel are available for different applications. Thus, the first step would be to select the correct grade of stainless steel for the application. Sassda and its members will be able to supply all relevant information to guide the selection process.

Unlike rust (also a surface layer), the surface layer on stainless steel does not readily react with most substances, hence being called the passive layer. Like human skin, this layer can repair itself, given that the affected surface is clean with access to environmental oxygen. This explains the fact that some routine and simple maintenance and cleaning are needed to keep stainless steel surfaces in good condition so that the aesthetic appearance and corrosion resistance are not compromised.

Where is stainless steel used in my home and kitchen?

Stainless steel touches every part of our lives and can be used for various functions and applications in and around the house. This would range from security fencing and garden furniture to creations of art, balustrades, kitchen surfaces and appliances; even fireplaces or wherever the superior properties of the material are needed. Stainless steel is mainly selected for corrosion resistance and durability. Combining this with the aesthetic appearance, versatility, hygiene, and safety properties, it renders a popular environmentally safe product with exceptional Life Cycle Costing benefits.

How do I clean exterior surfaces?

On external applications, such as façades, washing of the surfaces can be a natural process where rainfall can normally be expected to clean accumulations of dirt and other deposits efficiently, depending on the amount of exposure to corrosion agents and whether the design allows for efficient run-off and the surface smoothness.

Remember: it is important to allow the material free access to the environmental oxygen to keep the passive layer intact.

Special attention should be given to sheltered areas and crevices that are created by the design and installation. During routine cleaning, it is important to ensure that accumulations of contaminants are efficiently removed without damaging the material or the surface finish. This is particularly important in marine and industrial environments, where a build-up of airborne corrosive agents can result in corrosion in the form of discolouration and even pitting.

On building exterior applications, stainless steel may be exposed to a wider range of potentially more aggressive environments as a result of contact with:

- marine atmospheres
- environments laden with industrial pollutants
- salt spray from wave action, as well as
- atmospheric dirt and traffic film

A damp cloth or chamois leather, soft household soap and clean water will usually be suitable for washing and removing normal dirt. For more stubborn dirt, nylon scouring pads can be used but may scratch some polished surfaces. Metal-based scouring pads, cleaning wool, or wire brushes must not be used on stainless steel. Apart from scratching the surface, these pads can leave carbon steel deposits on the stainless surface, which can subsequently develop into rust. Non-stainless steel wire brushes must not be used.

Follow the grain pattern when cleaning on “grained” directional finishes, not across it. It is advised to dry the surface to prevent watermarks, especially in hard water areas. The use of deionised (distilled) water will prevent the formation of hard water stains.

For more stubborn stains, mild household cream cleansers should be effective for cleaning watermarks and



light discolouration. After cleaning, rinse with water and dry to avoid streaking and watermarks. Scouring powders should not be used as these products can leave scratches on stainless steel surfaces. More serious oil and grease marks can be removed with alcohol-based products or other solvents such as acetone. These non-chloride-containing products are not a corrosion hazard to stainless steel. Heavily neglected surfaces can be treated by removing most of the settled deposits with the methods mentioned earlier. The remainder can then be removed with metal polishes, such as those for cleaning chromium-plated items. Care must be taken as highly polished surfaces may become scratched with these cleaners. Cleaners for silver and brass should be avoided.

How do I clean exterior surfaces?

It is a good practice to clean the stainless steel at the same frequency as the building's windows. The reasoning is simply that the same dirt build-up visible on the windows will be on all exterior surfaces, including stainless steel. A dirty window is a “clear” indication that stainless steel is also dirty. This might damage the passive layer depending on the environment. Removing the dirt will restore the passive layer in most cases. Depending on the severity of deposit build up, routine cleaning frequencies of 6-12 months for light soiling and 3-6 months for heavy soiling is advisable.

How do I clean interior surfaces?

The cleaning of stainless steel items for building interiors is also aimed at ensuring oxygen reaches the surface and keeping the passive layer intact. It is really no different to other materials and entails little more than routine cleaning with soap and clean water. Cleaning should be done before there is a visible build-up of soiling, so that the effort of cleaning is minimised along with the risk of discolouration.

On interior applications, finger marks can be an issue. However, there is a wide range of finishes available for stainless steel, many of which are particularly suitable for use



in high traffic public areas. Selecting finishes that are less sensitive to fingerprint marking in the design process will reduce the effort and costs of cleaning during the service life of the finished building. Sassda can offer free advice in this regard and can assist with sourcing suitable materials and fabricators.

Brushed finishes, which are a popular choice for interiors, may show finger marks shortly after installation, but the visibility of the marking should become less evident after the first few cleaning operations as the passive layer settles into the environment. To remove fingerprints and other superficial marks from architectural finishes, soapy water or a mild detergent are usually safe and successful. Proprietary spray cleaners are available, which combine ease of cleaning with a light film that produces an even and smooth lustre. These spray cleaners remove existing fingerprints and leave the surface in a condition that reduces the tendency for fingerprints to show in subsequent service.

After applying the spray to the surface, polish with a dry cloth. Sassda will be able to advise on the suitability of products locally available. As a rule, cleaning agents with chloride content should be avoided. Mirror-polished stainless steel can be cleaned with glass cleansers. These products should also be chloride-free.

How do I clean kitchen surfaces and utensils?

Stainless steel surfaces and utensils in the kitchen are exposed to wear and tear, harsh chemicals and high temperatures, yet will last for many years looking “simply brilliant”. The table lists, various cleaning challenges on stainless steel and would be of value to any homeowner.

How do I remember all of this?

When using stainless steel in and around the house, this question becomes irrelevant to some extent. Simple routine cleaning with a clean, soft cloth, mild soap and water will do the trick 90% of the time. It’s important to use stainless steel safe cleaning agents and suitable cleaning brushes, etc.

Whom can I contact for more information?

For more information on stainless steel, contact us at info@sassda.co.za. Sassda members all adhere to a code of conduct and will provide you with quality service, products, and advice.

CHALLENGE	CLEANING AGENT	COMMENTS
Routine cleaning on all finishes.	Soap or mild detergent and water (preferably warm).	Sponge, rinse with clean water, and wipe dry if necessary. Follow polish lines.
Fingerprints on all finishes.	Soap and warm water or organic solvent (e.g., acetone, alcohol, methylated spirits).	Rinse with clean water and wipe dry. Follow polish lines.
Stubborn stains & discolouration on all finishes.	Mild cleaning solutions, e.g., Handy Andy, speciality stainless steel cleaners.	Use a rag, sponge, or fiber brush (soft nylon or natural bristle, i.e., an old toothbrush). Rinse well with clean water and wipe dry. Follow polish lines.
Lime deposits from hard water.	Solution of one part vinegar to three parts water.	Soak in solution then brush to loosen. Rinse well with clean water.
Oil or grease marks on all finishes.	Organic solvents (e.g., acetone, alcohol, methylated spirits, proprietary “safety solvents”). Baked-on grease can be softened beforehand with ammonia.	Clean after with soap and water, rinse with clean water and dry. Follow polish lines.
Cooking pot with burned food remnants.	Remove burnt food by soaking it in hot water with detergent, baking soda, or ammonia.	Afterwards clean and polish with a mild abrasive if necessary. See comments re steel wool.
Scratches on polished finishes.	Slight scratches - use impregnated nylon pads. Follow polish lines. Then clean with soap or detergent for routine cleaning	Do not use ordinary steel wool - iron particles may become embedded in the stainless steel and cause further surface problems. Stainless steel and nylon scouring pads are satisfactory.

HIGH-PERFORMANCE TOOLS FOR STAINLESS STEEL



TRUST BLUE

THERE IS NO SUBSTITUTE FOR QUALITY AND SAFETY

PFERD



www.pferd.com

- Range of tools dedicated to stainless steel applications.
- Tools for cutting, material removal and surface structuring.
- Delivering unsurpassed performance, safety and comfort.
- Superior process optimisation and cost efficiency.



Contact PFERD-South Africa for further information:
Tel: +27 11 230 4000 | E-Mail: sales@pferd.co.za | Website: www.pferd.co.za

A passion for stainless steel

Bertie Blom, is an excellent example of a new generation of stainless steel professionals who are set to take the industry to greater heights. Armed with an unwavering passion for stainless steel, Bertie is on a relentless quest to become a driving force in shaping and growing strategic customer relationships as a Sales Representative at Macsteel VRN Gauteng...

Please provide some background on where you come from, your school and tertiary education, and where you first started working?

I grew up in Elspark, a suburb of Ekurhuleni, Gauteng, where I attended Elspark Technical High School. During my schooling, I discovered my passion for technical drawing and design, excelling in the subject. After matriculating in 2010, I pursued my interest by enrolling at the African Academy to study draughting.

At the Academy, I successfully completed my Diploma in Structural Detailing. To gain practical industry experience, I applied for a learner position at Macsteel Service Centres SA (MSCSA), where I was offered a permanent position as Trainee Draughtsman. Over the past 11 years at MSCSA, I have held various roles within the company, ranging from draughtsperson to CNC operator, CNC Laser programmer, and production manager across different business units.

In 2019, I moved to our Macsteel VRN Gauteng division, taking up the position of sales representative. This opportunity allows me to utilise my technical expertise and experience in a customer-faced role. I am proud of my journey, starting from my education in draughting, gaining practical experience at Macsteel, and now contributing to the success of Macsteel VRN.

What are some of the key work experiences or projects to date, that you have worked on that have challenged you but also helped to shape your skills, experience, and career advancement?

Throughout my career, I have had the opportunity to work on several challenging projects that have significantly refined my existing skill set, shaped my experience, and provided me with a wealth of knowledge that allowed me to advance in my career. A notable project was my involvement



“ A notable project was my involvement in a large-scale structural project for a major construction company...it presented numerous challenges, however, these pushed me to enhance my problem-solving abilities, time management skills, and level of communication ”

in a large-scale structural project for a major construction company.

The project called for meticulous attention to detail and an understanding of structural engineering principles. I collaborated closely with engineers and construction teams to ensure the accuracy and feasibility of the designs.

The project presented numerous challenges, such as tight deadlines, evolving design requirements, and coordination with multiple stakeholders. However, these challenges pushed me to enhance my problem-solving abilities, time management skills, and effective communication.

Another significant experience was my transition to a production manager role within MSCSA. This role required me to oversee the production process, manage a team of operators and programmers, and ensure the efficient operation of the facility. A new and demanding responsibility tested my leadership skills and ability to handle multiple tasks simultaneously.

By successfully managing production operations and leading a team, I gained valuable insights into the operational aspects of the industry. This experience not only enhanced my technical skills but also developed my leadership capabilities and decision-making abilities.

What is your current position and how would you describe a typical day on the job?

Currently, I work as a Sales Representative at Macsteel VRN Gauteng. In this role, a typical day involves a combination of office-based tasks and fieldwork. In the office, I begin my day by reviewing and responding to emails and messages from clients, colleagues, and management. I prioritise my tasks, which include preparing quotes and proposals for potential clients, as well as following up on leads and managing existing customer accounts.

Throughout the day, I engage in various sales activities. This entails making sales calls to prospective clients to introduce our products and services, arranging meetings or site visits to discuss specific project requirements, and

negotiating contracts or pricing agreements. My goal is to establish strong relationships with clients, gain an understanding of their needs, and offer tailored solutions that align with their requirements.

In the field, I visit clients to further discuss their needs and address any concerns they may have. I also attend industry events to network and generate new leads.

What would you say are the biggest i. work and ii. life lessons you have learnt thus far in your life?

Reflecting on my journey thus far, I would say the biggest work lesson I have learned is the importance of adaptability. Throughout my career at Macsteel, I have held multiple positions within the company, and each role has presented unique challenges and opportunities. Being able to adapt to different roles, responsibilities, and business units has allowed me to broaden my skills and knowledge. It has also helped me stay relevant in a rapidly changing industry.

In terms of life lessons, one of the most significant lessons I have learned is the power of perseverance. Pursuing my goals is not always easy, and there are times when I face setbacks and obstacles. However, I remain determined and committed to my goals. This resilience has helped me overcome challenges, both in my professional and personal life, and has led to my growth and success.

How do you hope to take your career to even greater heights - what are your plans for the future?

I aspire to take on leadership and management roles and I plan to enhance my leadership abilities by completing a degree in Management and Leadership from the UFS Business School, where I am currently enrolled.

Furthering my studies will equip me with the necessary skills and knowledge to excel in a senior management role within a dynamic and challenging business environment. Continuous learning and development are crucial, as it improves critical thinking and problem-solving skills. Looking ahead, I aspire to take on greater responsibilities, lead cross-functional teams, and contribute to my industry through leadership and mentoring.

“ Through my education, experience, and passion for leadership, I strive to become an influential figure in shaping and executing successful management practices in an ever-changing business landscape ”



passionate professional profile

My goal is to make a positive impact by implementing effective management strategies and driving organisational success. Through my education, experience, and passion for leadership, I strive to become an influential figure in shaping and executing successful management practices in an ever-changing business landscape.

In your opinion what are the biggest challenges the South African stainless steel industry currently faces and what are some of the innovative ways these can be overcome?

The South African stainless steel industry is an important sector that contributes significantly to the country's economic growth and industrial development. However, it faces significant challenges that require creative solutions to ensure sustainability and competitiveness in the global market.

The industry is facing two major challenges, which are skill development and raw material supply, which leads to price volatility. The scarcity of skilled professionals and the fluctuating availability and cost of raw materials pose serious threats to the industry's growth potential.

To overcome these challenges, the government along with industry leaders, would have to develop targeted skill-building programmes, as well as intensify efforts to retain

skills that are currently exiting the country into the global market.

Although there is no exact science to it, the South African stainless steel industry must ensure that it has enough raw materials to control price fluctuation. To accomplish this, it could diversify its sources and establish stronger local and international partnerships.

What do you consider the most exciting innovations/product developments happening in stainless steel right now and what sectors hold the greatest potential for the use of stainless steel in the future?

One of the most exciting innovations about stainless steel is that it is increasingly being used to make structures for renewable energy. Stainless steel is widely used in the manufacture of wind turbines and solar energy systems.

The durability and corrosion resistance characteristics of stainless steel make it an innovative choice for renewable energy. It can tolerate extreme conditions, assuring dependable operations and lowering maintenance expenses. Its robustness makes it excellent for long-lasting and dependable infrastructure in sustainable energy projects, and as demand for clean energy grows, so will the need for stainless.



Comprehensive product range

Plate | Sheet | Coil | Tube | Round Bar | Long products

Value added processing services

Cut to length | Plasma cutting | Laser cutting | Bending
Drilling | Rolling | Polishing

Quality

We are an SABS ISO 9001:2015 accredited supplier

Johannesburg: 011 866 3100

Cape Town: 021 950 5800

Durban: 031 791 5000

Rustenburg: 014 596 5042

Springbok: 027 718 1984

Kathu: 053 723 2357

Klerksdorp: 018 469 4282

Port Elizabeth: 041 409 6900

Witbank: 013 655 2200

info@macsteel.co.za

MACSTEEL®

VRN VALUE ADD



www.macsteel.co.za

A renowned pioneer in the brewing industry and champion of stainless steel

It is with deep sadness that we announce the passing of John Cluett, a visionary and trailblazer in the brewing industry and a staunch advocate of the strengths and benefits of stainless steel. John's remarkable contributions to the brewing industry in South Africa, as well as his pivotal role in the development and utilisation of stainless steel in the food and beverage sector, have left an indelible mark on the industry's history.

John's journey in the brewing industry began decades ago, when he embarked on a mission to revolutionise the materials used in brewing vessels. Through extensive studies and tests conducted in 1983, John meticulously documented the condition of brewing plants at SAB and diligently investigated incidents of plant damage.

His research paved the way for the substitution of coated mild steel fermenting and storage vessels with durable and hygienic stainless steel vessels. As a result of his pioneering efforts, SAB and SABMiller made the landmark decision to exclusively adopt stainless steel vessels that met approved standards after 1987.

In 2000, John took the lead in a ground-breaking project that examined the cleanability of stainless steel from both a soil/biofilm and microbial perspective. Collaborating with Columbus Stainless and other members of Sassda, John audited an entire brewery and oversaw the construction of a 700L research vessel. This ground-breaking work culminated in John being awarded a Master of Science degree from RAU.

In 2003, under the auspices of The Institute & Guild of Brewing, the findings of this project were used to create a seminal training book *The Principles of Hygiene in the Brewing Industry*. Co-authored by John in collaboration with Dave Rowlands, Dumisani Khanyile and Gavin Hulse, this book remains an invaluable resource in the SAB Institute of Brewing Solutions and continues to inspire readers worldwide.



Even after his official retirement, John remained a revered consultant for SAB, providing expert guidance on stainless steel matters. His exceptional knowledge and unwavering dedication to the industry ensured that his legacy would endure, and his impact would continue to shape the future of brewing in South Africa.

John's lifetime achievements were acknowledged in 2016 when he was bestowed with the prestigious Sassda Lifetime Achievement Award for his unparalleled contributions to the brewing industry in South Africa. This well-deserved accolade was a testament to his visionary leadership, meticulous research, and unwavering commitment to excellence.

Outside of his professional endeavours, John was known for his warmth, kindness, and infectious enthusiasm. He was deeply respected and admired by colleagues and friends alike, not only for his professional achievements but also for his humility and willingness to share his expertise with others.

John's departure leaves a void in our industry, but his remarkable legacy will continue to inspire generations to come. His relentless pursuit of excellence and his instrumental role in championing stainless steel as a vital component in the food and beverage industry will forever be remembered. Our thoughts and condolences go out to John's family, friends, and all those whose lives he touched.

A quest to elevate SA's stainless steel sector



Sassda's newly appointed Market Intelligence and Lobbying Specialist Tebogo Nkwe says her primary focus going forward will be to promote and expand the local stainless steel sector. Her role encompasses driving sectoral growth while ensuring that Sassda's members receive exceptional care and substantial benefits from their association. Tebogo is already actively engaging with government institutions, thereby increasing awareness and encouraging the use of stainless steel for the betterment of the sector. In this profile, we explore Tebogo's inspiring journey, her dedication to the stainless steel industry, and her vision for its future...

Please give a brief outline of where you grew up, went to school, and completed your tertiary education?

I come from a village known as Pella, situated in the North West province. I was raised by both parents with my four siblings. I went to Grenville High School in Rustenburg and later completed my tertiary education - BTech Physical Metallurgy and Quality Management Systems - at the University of Johannesburg. I also hold an SAIW Welding Inspection and Fabrication Level 2 qualification.

How did the first years of your career/first job/s build on what you learnt at university/college but in a more practical setting? What were the key lessons you learned during this time?

My first job was my experiential training at Hulamin in Pietermaritzburg. I worked in the Metallurgical and Mechanical Laboratory where we conducted various metallographic and mechanical tests and gave recommendations. Learning theoretical physical metallurgy can leave you a little crazy, it is only when you apply it

practically that the dots start to come together! Working at the lab came with a lot of “aha” moments, confirming what I had learned in school. It allowed me to become familiar with every product in the company and every process it undergoes because they all ended up at the lab for final testing.

During my time at the company, I learned teamwork, the importance of research, and going the extra mile in everything I do. The importance of time, when working in a 24/7 production environment time, is critical, certain things must be done faster so it doesn't halt any process. The most important lesson I learned was listening; listening to those who had been at the company before me and watching how they worked. The knowledge they imparted to me was great and I carry some of it with me to this day.

How did you come to work at Sassda and what will your role be at the association?

I heard of an opportunity, and I submitted my CV. As they say, the rest is history. My position at Sassda is focused on market intelligence and lobbying. In a nutshell, my role is to promote local stainless steel sector with the ultimate aim of growing the sector. I am also involved in ensuring that our members are well taken care of and benefit greatly from our association and get involved with government institutions in increasing awareness and use of stainless steel.

What do you feel are the biggest obstacles currently facing the local stainless steel sector?

The impact of COVID-19 was massive and the stainless steel industry is still recovering from its effects. Loadshedding is another factor that is proving to be a hindrance to the local growth of the stainless steel industry. In addition, Europe with its import caps and high tariffs which ultimately affect imports is also having a significant effect.

Why does Sassda have such an important part to play in assisting the local industry overcome the challenges it faces and for it to grow and prosper?

Sassda is one of the most active stainless steel industry associations in the world and has been involved in increasing the awareness and use of stainless steel in Southern Africa since 1964. The association identifies training, mentorship, and capacity building as core interventions, thereby assisting the local industry to overcome the challenges it faces to allow for growth. For example, our technical enquiry support service ensures that members are assisted and the technical problems they encounter are solved or minimised. This helps to improve their ongoing profit margin and quality standards. Training is offered to impart more knowledge

and a better understanding of the use of stainless steel. Sassda is also involved with government entities in promoting and growing local businesses through funding and other means available.

What do you consider the most exciting innovations/developments in stainless steel?

The accidental invention of stainless steel in 1912 will always remain the most exciting for me and even more so, because stainless steel remains one of the most sustainable materials. The other interesting development was the invention of 3CR12 stainless steel in South Africa, a metal designed to bridge the gap between expensive stainless steel and mild steel. The development of 3CR12 has proven to be significant as it can be used in a wide range of applications.

The future of stainless steel is promising; developments such as 3D printing, sustainable practices, and automation are leading the way. These innovations will undoubtedly revolutionise industries that rely on this durable material for their products and projects.

What is your life philosophy or a sentence that sums up your approach to life and work?

Wherever life plants you, sow good seeds and bloom with grace.

What is one of the most important lessons you have learnt in life and who or which situation did this stem from?

Life happens and just like that things can take a turn for the worst. You must get up each day and show up regardless. Realistically, some days will be worse than others but giving up is never an option. This philosophy stems from the financial and job loss I experienced because of the COVID-19 pandemic.

What are your personal and professional goals for the next year?

Professionally, to start my MBA journey. I am already involved with a few projects at Sassda, and I would love to see myself heading some of those projects. I would also love to see myself giving out training on some of the courses we offer. I am happy with myself and how I am handling the challenges of my new role and can only anticipate getting even better at it.

I just want to live a more harmonious life; a slow, content, peaceful kind of life. I am truly not rushing anywhere just taking each day as it comes, recreating my work-life balance and learning good habits.

SASSDA collaborates to enhance stainless steel tooling skills in SA



As part of its role as the voice of the stainless steel sector in South Africa, Sassda, together with a number of its members embarked on an informative and productive visit to the **Production Technologies Association of South Africa (PtSA)** in Centurion, Pretoria in June 2023. The primary objective of the visit was to evaluate the potential benefits for Sassda members from PtSA programmes.

During a tour of its facilities, PtSA showcased its various skills development programs, which are designed to ensure that crucial skill sets are readily available for their members and partner organisations. The goal is to help enhance efficiency, competitiveness, and profitability for businesses in the industry by providing access to world-class training opportunities supported by PtSA.

Sassda's Tebogo Nkwe explains; "During a walkthrough of the PtSA's exceptional facility we had an opportunity to observe the cutting-edge equipment and machinery utilised for training purposes firsthand.

"PtSA offers an extensive range of equipment that spans various technologies - from CNC milling and turning machines to grinding machines, lathes, and wire electrical machines - ensuring their students receive comprehensive and up-to-date knowledge. In addition, they provide tailor-made programs specifically designed to cater to the needs of toolmakers within Sassda's membership," she says.

On-site testing and evaluation

Another noteworthy feature observed during the visit was PtSA's on-site testing centre, which assesses the effectiveness of its courses by evaluating knowledge transfer success rates. "Having a dedicated testing facility on their

premises signifies PtSA's unwavering commitment towards maintaining educational excellence and driving industry growth through continuous training and skill development," Nkwe adds.

The day's visit concluded with a presentation outlining how Sassda members can derive benefits from collaborating with PtSA, followed by a networking session that enabled participants to establish new connections and exchange valuable insights.

Reflecting on the experience, Nkwe affirmed, "This visit to PtSA was immensely rewarding for all attendees, and we believe it has opened up exciting avenues for collaboration between our members and the esteemed association."

Sassda would like to thank the following members and companies for their attendance at the event: DMR Stainless Steel - JHB, Grating World, Innov-X-Africa, Pferd SA, Swiss Steel, Styria and Valbruna.

For more information on this initiative and the potential benefits for your business email Tebogo@sassda.co.za





One-Day Southern African Steel Summit to Drive Industry Competitiveness and Innovation

In a bid to bolster the Southern African steel sector and facilitate meaningful dialogue among key industry stakeholders, the SA Iron and Steel Institute (SAISI) has announced an exciting and informative one-day event, the Southern African Steel Summit that will take place on the 30th of August 2023.

The summit which will be hosted at Emperors Palace, Kempton Park, aims to be a strategic gathering of experts and professionals from the steel industry, offering an opportunity to explore vital inputs and topics influencing the competitiveness of the region's steel sector.

In addition, the event will focus on providing attendees with in-depth insights into the Southern African steel market and its near-term outlook. The primary goal of the summit is to equip participants with the knowledge necessary to make informed decisions, build realistic budgets, and assess risks and investments for the next three years.

A significant milestone

SAISI Secretary General Charles Dednam comments; "This information-packed summit is a significant milestone for our industry. By bringing together policymakers, producers, buyers, suppliers, analysts, and investors, we aim to address the challenges hindering sector growth and explore innovative solutions to drive the industry forward."

The event will cover an array of critical topics, including the demand and supply dynamics of the Southern African steel sector and the cost implications that are expected to shape the industry's trajectory. Furthermore, industry experts will shed light on the latest technological advancements and applications that are guiding the development of the steel sector globally and within the African continent.

Apart from the knowledge-sharing sessions, the summit will also provide ample networking opportunities for attendees to interact, exchange ideas, and establish valuable professional connections. Following the information-packed day, participants will have the chance to unwind and engage in further discussions during a relaxed cocktail event.

To register for the Steel Summit on the 30th of August 2023 at Emperors Palace, Kempton Park go to:
<https://steelsummit2023.saisi.org/steel-summit-2023-registration-form>

Record Attendance and Perfect Weather Make Sassda/SAIW 2023 KZN Golf Day a Resounding Success

The Royal Durban Golf Course recently witnessed an extraordinary gathering of our industry's professionals at the highly anticipated Sassda/SAIW 2023 KZN Golf Day. With the record breaking participation of 120 players, this event proved to be an exceptional opportunity for networking and forging valuable business relationships in a stunning setting.

The picturesque golf course provided the perfect backdrop for industry experts from the East Coast to connect, exchange ideas, and expand their professional networks. Attendees praised the immaculate course and the idyllic weather, which further elevated the experience for all participants.

In addition to the day's play, the awards dinner was a great success attended by 165 players and their guests, which added to the networking opportunities and camaraderie shared throughout the day.

We'd like to extend a big thanks to our sponsors without whom the event wouldn't have been possible: NDE, Macsteel VRN, Euro Steel, Steelbank, Cosmic Industrial Supplies, Columbus Stainless, Franke South Africa, and AED Engineering.



Sassda hosts highly successful visit to the only stainless steel mill in Africa!



Sassda hosted its second visit this year to Columbus Stainless in May which was once again a huge success as 30 attendees witnessed the powerful origins of South African stainless steel. The two hour walking tour of the world-class facility was followed by a networking opportunity over lunch.

Sassda's **Tebogo Nkwe** who attended the mill visit comments; "Sassda's visit to Columbus Stainless showcased a world-class facility powering the South African economy. On-site visits like these are important as they help create industry connections, innovation, and growth."

Sassda would like to extend its sincere thanks to the companies that attended the visit: EMVAfrica, Franke

South Africa, Genesis Steel, H&M Tecnocoat, Pferd SA, PTD Metalworking Professionals, Stonehenge Steel, Sindane Business Solutions, the Southern African Institute of Welding, Valbruna Stainless SA, Ventura Manufacturers and Viraj.

For more information on our next visit to Columbus Stainless please email francis@sassda.co.za