

stainless steel

the journal of the southern africa stainless steel development association



ISSUE 2 2024

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Navigating uncertain times: opportunities and growth in the year ahead

Welcome to our late Autumn edition. We are certain there will be enough content to make for an enjoyable read on a cold evening.

We still live and operate in uncertain times at a global level. Major elections are taking place in the Americas and Europe that might not change the global political profile much. However, they might, and most likely will, impact our industry and the South African economy.

Military activities continue in the Middle East and Eastern Europe with no real solutions in sight. This has created changes in the global way of doing things, such as shipping volumes diverting from the Suez Canal, to around the southern tip of Africa. The picture might not be too rosy, but there remain subtle opportunities for the country and local industry. The European Union is also experiencing industrial difficulties with continuing strikes limiting the availability of cold-rolled material in Europe. While the safeguarding regulations have been extended to 2026, the caps limiting exports to Europe have been adjusted. Reports from the East indicate rising nickel prices but with a marked degree of volatility.



Uncertain times

In South Africa, we have just completed a successful and peaceful national election with the promise of political stability and accelerated economic growth. It is accepted that the major structural overhaul of the many institutions in dire need of reform cannot happen overnight. However, a positive attitude, combined with small immediate successes, can create trust among investors and stakeholders.

The industry is also facing a level of uncertainty with the announcement of the retirement of Trade & Industry Minister **Ebrahim Patel** with no real successor being earmarked at the time of writing this. It also appears that the stoppage of load shedding was not an election gimmick and can be sustained. It is worth noting our gratitude towards the industry and our members who invested in renewable systems, removing load from the national grid. Once again, an example of an adaptable industry with a resilient “never say die” attitude.

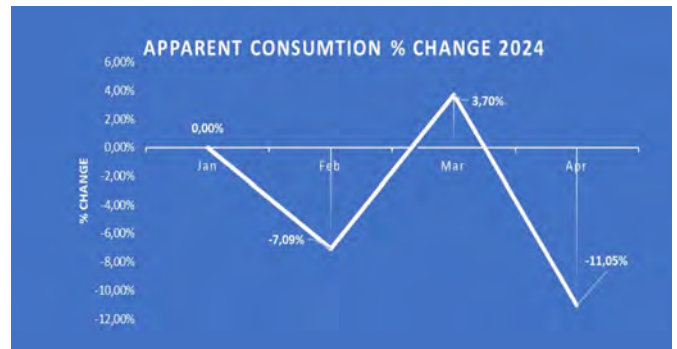
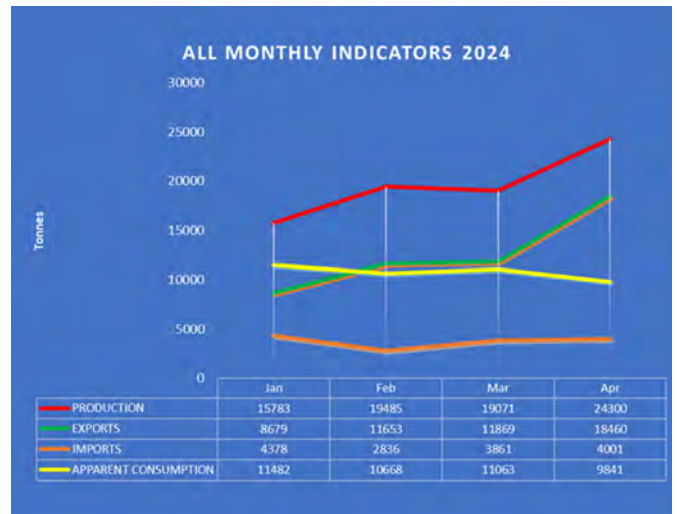
Consumption figures

In terms of local production, stainless steel was moving laterally during the first quarter but showed good growth in April, which is also reflected in the export figures. Imports did not change much from their historic values, but local consumption edged slightly down in April. However, local consumption is the tonnage that gets locally converted by fabricators who would still have been exposed to load-shedding in this period. As a result, we believe that we will see a definite increase in this figure in the second quarter of 2024. Substantiating this opinion is the 5% growth in national manufacturing during the same period.

Uncertain times, but with a good promise that things can get better this year and that we will soon see the local consumption tonnage returning to the pre-pandemic levels of 156 000 tonnes. This is important, as it would mean job creation and growth.

Please enjoy this effort by our editorial team and remember to enter the Sassda Awards that will take place later this year. You can read more about this in the magazine, but we are excited about the opportunity again to honour the companies and individuals that make our industry great.

Michel Basson
Sassda Executive Director



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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...

Anglo to cut ties with Amplats, De Beers in historic restructure

Anglo American has announced a radical restructure - its most far-reaching in decades - in which it would demerge its 79% owned Anglo American Platinum (Amplats) and sell or demerge De Beers, the diamond mining entity with which it has been linked for over a century. It also proposes the sale of its steelmaking coal assets and the closure or sale of its nickel operations leaving behind a simpler structure consisting of copper, iron ore (including Kumba Iron Ore in South Africa) and its crop nutrient project Woodsmith...[Read more](#)



Tshwane Automotive City takes shape, unlocks billions in investments

Development of the multi-billion-rand Tshwane Automotive City (TAC) is gaining momentum following the installation of bulk infrastructure at its centre and the commencement of the 700 000 square meter Rosslyn Hub mixed-use development. A key aspect of this economic hub is a joint venture between China-based Yanfeng and French company Plastic Omnium resulting in a R670-Million investment in a new 26 000 square meter factory...[Read more](#)

R40M required to kickstart captured Atlantis SEZ rail line

The Atlantis Special Economic Zone (SEZ) is still aiming to restart its rail service. This follows the SEZ rail link with the Port of Cape Town being severed in 2018. This took place near Montague Gardens, when the rail line was invaded, forcing operations to stop. The Atlanta SEZ, which has a 43km long rail link to the Port of Cape Town, is setting itself up as a green energy hub and sees the restarting of the rail service as a development that could boost this industry...[Read more](#)





Private sector dominates investment in South Africa

The private sector is continuing to carry the lion's share of capital investment in South Africa, increasing its spending on infrastructure, software, research and development investments. This comes as public corporations (SOEs) spend on infrastructure continues to fall. This according to Investec Chief Economist **Annabel Bishop** who said that "the private sector continues to drive capital investment in South Africa, contributing over 70% to growth in fixed investment... [Read more](#)

Historic wage agreement reached in metals and engineering sector

A landmark three year wage agreement has been signed between Seifsa, representing many employers in the metals and engineering sector, and Numsa, the largest trade union in the industry. The agreement, hailed as a testament to the commitment of social partners, was reached in record time and without any industry disruption. This agreement sets out pay rises based on the lowest planned rates of pay for the next three years... [Read more](#)



Astron Energy, BP, and Engen announce big plans for South Africa

Astron Energy, BP, and Engen announced their plan to invest significantly in their domestic operations. This comes after news broke that rival fuel franchise Shell is exiting South Africa and selling its 600-plus forecourts and service stations. Astron Energy is one of the newer players in the fuel game, having taken over Caltex's local infrastructure in August 2022. With over 800 retail sites, a blending plant in Durban, and a refinery in Milnerton, it is one of the few industry participants that is currently refining its fuel instead of relying on imports – an area in which it sees plenty of potential... [Read more](#)

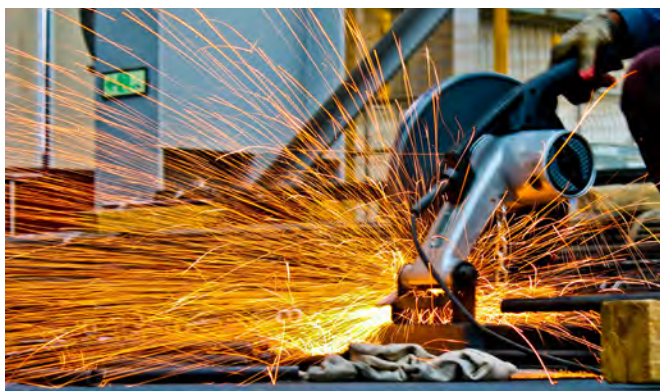
Volkswagen announces R4-Billion Kariega plant investment

Volkswagen Group Africa has announced a R4-Billion investment in its manufacturing plant in Kariega, in the Easter Cape. The investment will be used to upgrade facilities in various areas in preparation for the addition of a third car model to its production line-up from 2027. Most of the R4-Billion investment will be allocated to capital expenditure for production facilities, manufacturing tooling, local content tooling and quality assurance... [Read more](#)



Green energy presenting South Africa with massive reindustrialisation chance

Green electrons and green molecules are presenting South Africa with a massive opportunity to reindustrialise, Nedbank CIB Head of Infrastructure, Energy and Telecommunications Mike Peo told the Green Hydrogen Roundtable. “We have an opportunity for South Africa to completely reindustrialise, to start building up our industrial base that we have lost over the last ten to 15 years,” was Peo’s message at the event addressed by the Chemical Industries Education & Training Authority CEO Yershen Pillay, as well as by Higher Education and Training Department Deputy Director General Zukile Mvalo...[Read more](#)



Industrial sectors at a turning point

The industrial sectors in South, East and West Africa urgently need to transform their ageing infrastructure and systems to remain competitive and contribute to addressing the continent’s unique infrastructural and service-related challenges. This was the view of IS3 MD **Dion Govender** speaking at the opening of the 30th XChange Conference where he stated that the industrial community plays a significant role in facing and addressing these challenges. ...[Read more](#)

SA agricultural sector receives boost with new avocado oil plant

Mpumalanga is celebrating the inauguration of Cultivate Trading’s avocado oil production facility in White River, just outside Mbombela. This state-of-the-art plant is poised to revolutionise the local avocado market by providing farmers with an alternative avenue for their produce. Specifically targeting avocados that are not market-grade due to hail damage or other defects, the plant offers a solution to what was previously a loss for farmers...[Read more](#)



Sudden container crunch sends ocean freight rates soaring, setting off global trade alarm bells

A perfect storm in global trade is creating a shipping container capacity crunch, fueling a sudden and surprising spike in ocean freight rates. The beginning of peak shipping season, coupled with the longer transits to avoid the Red Sea, and bad weather in Asia, have hit the flow of trade on key routes. Ocean carriers are skipping ports or decreasing their time at port, and not picking up empty containers, to keep vessels on track for delivery...[Read more](#)

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2024 Sasdda Columbus Stainless Awards: Celebrating a Legacy of Brilliance

2024 marks the 60th anniversary of Sasdda, one of the world's oldest stainless steel associations and the authoritative voice of stainless steel in Southern Africa.

In tandem with this, the 2024 Sasdda Columbus Stainless Awards are hotting up, as we fast approach the submission closing date of 8 July 2024. The award winners will be announced at a Gala Dinner at the Indaba Hotel in Fourways, Johannesburg on September 19, 2024, that will feature MC **Alan Committie** and world-class entertainment from the **Justin Serrao Band**.

Celebrating excellence and innovation

The 2024 awards aim to honour excellence and innovation within the stainless steel industry under the theme "A Legacy of Brilliance." Which reflects the enduring impact of stainless steel on various sectors. Sasdda Executive Director **Michel Basson** comments; "This theme acknowledges the material's durability, versatility, and aesthetic qualities, which have made it indispensable in modern innovation.

"The awards also honour industry leaders and professionals who have dedicated themselves to maintaining and enhancing this legacy through their pursuit of excellence."

Basson adds; "The stainless steel industry continues to lead in technological advancement and sustainable development. The 2024 Sasdda Columbus Stainless Awards will highlight these contributions, underscoring the essential role of stainless steel in fostering a sustainable future. The awards will recognise exceptional achievements in categories ranging from architectural design to engineering innovation."



IMPORTANT DATES TO NOTE:

Submission
Deadline: 8 July 2024

Awards Ceremony:
19 September 2024



He elaborates that participating in the Sassda Columbus Stainless Awards provides a range of benefits. Firstly, it offers industry recognition, acknowledging a company's accomplishments and contributions to the stainless steel sector. Secondly, it presents networking opportunities, enabling entrants to connect with industry leaders, potential clients, and collaborators at the awards ceremony.

In addition, it provides market exposure by showcasing projects and innovations through Sassda's extensive network and media coverage. Lastly, it fosters employee motivation by celebrating each team's hard work and dedication which boosts morale.

A rallying call

Sassda therefore encourages all industry players to participate in the 2024 Sassda Columbus Stainless Awards by submitting their top projects and innovations. The awards encompass a broad spectrum of categories:

- **Sustainability** - Recognises a sustainable innovative new product or project impacting energy use, environmental improvement, recycling/material use, or life-cycle costing.
- **Duplex Stainless Steel** - Highlights the use of this specific grade of stainless steel in applications demonstrating innovation and life-cycle cost-effectiveness, covering both projects and products.
- **Ferritic Stainless Steel** - Celebrates the use of Ferritic stainless steel in products or projects showcasing innovation, life-cycle cost-effectiveness, substitution, and growth potential.
- **Austenitic Stainless Steel** - Honours the use of Austenitic stainless steels in projects or products demonstrating innovation, life-cycle cost-effectiveness, substitution, and growth potential.
- **Export Achievement** - Recognises significant growth in export sales through innovation, quality, and effectiveness (volume, value, or both).
- **Business Excellence** - Awards businesses building sustainable, long-term, thriving enterprises demonstrating innovative use of stainless steel in product design and development.
- **Lifetime Achievement** - Celebrates individuals who have made outstanding contributions to Sassda and the stainless steel industry.
- **Overall, Winner** - The most successful and outstanding winner from all categories.

Submission guidelines and important dates

To enter the 2024 Sassda Columbus Stainless Awards, industry players must submit detailed applications outlining their project, product, or innovation. Submissions should include high-quality images, technical specifications, and a narrative highlighting the project's significance. The judging panel, composed of industry experts, will evaluate each entry based on innovation, sustainability, and overall contribution to the industry.

For more information, submission guidelines, and entry forms, go to <https://sassda.co.za/sassda-columbus-stainless-awards-2024> or email awards@sassda.co.za and a Sassda staff member will contact you to assist with entry completion and submission.

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From entrepreneur to industry leader: Heinrich Vollgraaff's vision for Stainless Steel

In this exclusive interview, we delve into the professional journey of NDE Western Cape Sales Manager Heinrich Vollgraaff. From studying mechanical ventilation and heavy current at the College of Cape Town to starting his own company at 21, Vollgraaff's career has been marked by innovation and resilience. With insights into the challenges and opportunities facing the stainless steel sector, he discusses the importance of local manufacturing, the impact of global economic shifts and the exciting advancements in metal forming and manufacturing...

What did you study after school and what is it about the discipline that attracted you to this field of study?

I was born and raised in Cape Town and went to school in Durbanville. After school, I studied mechanical ventilation at the College of Cape Town for three years. This is essentially about managing the airflow in buildings, particularly in spaces like bathrooms and kitchens where a specific amount of air needs to be circulated. Additionally, I studied heavy current. I've always been more of a practical person, and I had a clear goal of starting my own business utilising this training.

How did the first years of your career build on what you learned during your tertiary education but in a more practical setting? What were the key lessons you learned during this time?

After finishing my studies at the age of 21, I opened my own company, Aircon Africa. I quickly gained customers like KFM and Tailormade Properties. Being young, I found myself in meetings with industry veterans and gained a

wealth of experience. I had to listen, make decisions, and consider all possible outcomes. A crucial lesson was to strive for win-win scenarios - not just what worked for me and my company, but also what worked for the customer and the contractor. I also learned to be open to failure and criticism and how to turn those experiences into a valuable learning opportunity.

There aren't many 21-year-olds who start their own company. Why did you choose to do that instead of first entering a formal workplace?

I followed the example set by my family. From my Dad, in particular as he ran his own business and it seemed natural for me to follow suit. He always supported my independence, and I learned by, diving in headfirst and figuring things out as I went. This approach taught me that failure isn't a setback but a learning opportunity. My Dad didn't have a background in my field of study, but he did have a sales background and this support allowed me to take risks with the mentality that if it worked, great; if not, I would find another way.

How did you come to work at NDE?

After running my company for about two years, the 2008 financial crisis hit. Many of the projects I was working on stopped, and I decided to close the company to avoid financial complications. I helped my employees find jobs elsewhere and then started looking for work for myself. Through a recruiting company, I had to choose between NDE and another company. I chose NDE because the interview process was different and suited me better. It wasn't a typical interview; it involved meeting various team members in an exploratory and collaborative atmosphere, which gave me a good feel for the company culture.

How would you describe a typical day in your current position? What are your key focus areas and areas of expertise?

Every day is different, depending on market conditions and daily requirements. Common tasks include analysing sales trends from the past weeks and months and planning for the future. I also spend a lot of time with my sales team, ensuring they operate at their best. Lately, I've been more involved in stock management to ensure we can continue to optimally fulfill orders.

What is the biggest project, product launch, or innovation you're working on, and what lessons has it taught you so far?

The biggest project for me is building a highly effective sales team. I've also learnt to pay more attention to small details and to not always dive in head first, but rather take a step back and let things play out before intervening. This approach allows me to see how the team adapts and what positive outcomes can arise from challenges.

What kind of training or workshops do you conduct with your team?

We have general training for all staff, including product training and sales training. Additionally, we offer individual training based on each person's current skills and needs, focusing on areas they need to develop in the short and long term.

What do you feel are the biggest challenges facing South Africa's stainless steel sector at present, and how can these be overcome?

As other metals and composite materials develop, they pose a challenge to stainless steel. Another threat is the influx of finished goods into the country, which negatively affects our own manufacturing sector. One way to counter this is for South African businesses and consumers to be more patriotic, like in the US, and strongly support locally

manufactured products. This approach would support local industries and maintain a vested interest in local production and after-sales service.

Does the import of finished goods affect you directly in terms of logistics or supply chain issues?

Yes, significantly. We've had to increase our stockholding to manage shipping delays and longer lead times. This also affects how we respond to sudden demands from project managers who sometimes delay decisions until the last minute.

Why do you feel that stainless steel still has such an important role in growing South Africa's economy? What are the sector's inherent strengths that continue to add value to our economy?

Stainless steel is incredibly versatile, and is used in everything from park benches to I-beams in building construction due to its advantageous properties over carbon steels. There's still a vast potential for increased usage in everyday applications. The lifecycle cost of stainless steel is a significant advantage that is often overlooked but crucial for long-term gains. As more people, especially younger designers, get exposed to global trends, stainless steel will see more innovative applications here in South Africa.

What do you consider the most exciting innovations and product developments happening in stainless steel right now?

There are constantly new grades of stainless steel being developed, but the most exciting innovations are in metal forming and manufacturing. Modern equipment allows for stainless steel to be used in ways that were formerly impossible, like creating smaller, more intricate parts. This development means stainless steel can now be used in applications that previously required injection-moulded parts. Additionally, stainless steel is becoming an aspirational material, with people willing to invest more in better quality, longer-lasting products. This trend is evident even in everyday items like cookware and household fixtures.

Do you see a growing appreciation for stainless steel's recyclability and lifecycle cost advantages in South Africa?

Not yet, unfortunately. While these concepts are well understood and valued in places like Europe, South Africa is still catching up. However, I believe we will get there eventually, possibly due to regulatory changes or increased environmental awareness. In the meantime, it's important to keep educating the market about the long-term benefits of stainless steel.

Stainless Steel the healthiest choice for clean machines

Basic guidelines for fabricating stainless steel equipment for hygienic industries



Stainless steel fabrication is a crucial industrial process that has a significant impact on various industries. It involves the transformation of stainless steel into various products and components used in construction, manufacturing, and infrastructure development.

In this article, we will explore the importance of stainless steel fabrication and its relevance in today's world. Stainless steel's versatility makes it a preferred choice across various industries as its unique combination of properties, such as corrosion resistance, durability, and aesthetic appeal, allows it to excel in numerous applications. Unlike other materials, stainless steel is well-suited for both structural and aesthetic purposes, making it a versatile choice for a wide range of projects.

The hygienic properties of stainless steel make it a cornerstone in both the food and pharmaceutical sectors, and it is the material of choice for equipment such as tanks, piping, and storage units due to its resistance to contamination and ease of cleaning. In pharmaceutical manufacturing, stainless steel is crucial for maintaining the integrity of products by preventing contamination. Similarly, in food processing plants, stainless steel surfaces are easy to sanitize, ensuring food safety.

In this article, a few important fabrication guidelines and practices are listed that can assist fabricators. However, the true requirement for the fabrication of world-class products is much more involved as there is no local standard or official

guideline or code that exists in the South African stainless steel sector. Sassda has therefore started the process of compiling such a code but has used the information contained in the Australian Food Code of Practice as a framework for this article.

Start with a strong foundation and a paper trail

It is the fabricator's expertise that ensures that the stainless steel used in these industries meets stringent requirements. As such, a successful stainless steel fabrication of food, beverage, and pharmaceutical equipment will have the following crucial elements in place when starting a project:

- **Supplier accreditation systems to ensure the integrity of the process from concept to the final commissioned equipment and even beyond.** This entails an efficient means of ensuring that materials, products, and services from suppliers meet the required standards. There should be traceability of supplier accreditation with a good track record in the industry.
- **Quality systems to ensure traceable adherence to customer specifications and regulatory requirements of the industry.** While an internationally accredited system such as ISO 9001 is preferred to demonstrate

commitment and an ability to continuously produce quality products, it is not always a stringent requirement in the South African industry. Fabricators that can illustrate a working quality management system, built on the principles of the ISO 9001 standard, and a willingness to comply with the quality system of the customer, would not be excluded from work in the industries requiring hygienic processes and equipment in the South African context.

- **Compliance with the applicable health, safety, and environmental laws and regulations remains important.** The fabricator should have the knowledge and a good understanding of the relevant standards and legal requirements of the industry they intend to work with. The fabricator should be confident enough to be subjected to third-party quality inspections.
- **A thorough paper trail.** Documentation that demonstrates experience, technical capacity and capability, staff training records, standards and codes used by the fabricator, as well as referrals from past customers, shows a sound and traceable industry track record. This can be instrumental in securing good work.

Design to succeed

Solid fabrication starts in the design phase, and a superior design will consider customer needs, the design requirements for hygienic applications according to the relevant standards, and the practical implications of this within the final manufacturing design and production processes. Some of these general design considerations will speak to material grade selection and surface finishes. For instance:

General requirements:

- The design shall avoid creating areas where pooling and subsequent evaporation can lead to a concentration of contaminant residues.
- Consideration should be given to possible galvanic corrosion effects from contact between dissimilar metals.
- Suitable allowances shall be made for thermal expansion and contraction between various grades of stainless steel and other materials.
- Stairways, handrails, platforms, and walkways shall be designed, fabricated, and installed by the applicable South African regulations.
- Insulation required for vessels or pipes operating at non-ambient temperatures shall be chloride-free and protected by outer cladding.

Product contact surfaces:

- All interior surfaces of plant and equipment shall be self-draining to avoid the creation of pockets of product

during operation or cleaning. At least a three-degree slope is required.

- A dead leg length shall be no longer than 1.5 times the pipe diameter.
- Corners shall be radiused to facilitate drainage.
- Design features that create a crevice, open to the product, or a hollow body adjacent to the product, shall be avoided. In addition, threads must not contact the product.
- The design of the plant or equipment shall ensure that all surfaces in contact with the product are readily accessible for inspection, cleaning, and maintenance.
- CIP equipment must be designed to ensure that all surfaces can be adequately cleaned.
- All lids or access covers should be designed so that when opened; contaminants on the exterior of the equipment or lids/covers are prevented from entering the plant or equipment.

Non-product surfaces:

- Crevices and residue collection points shall be avoided.
- The design shall ensure that all non-product contact surfaces can be readily cleaned.
- All non-product contact surfaces and supporting structures should be designed to shed water.
- Horizontal surfaces are undesirable.
- To control the “stickability” of organic materials, surface roughness parameters such as Raz or Ramax may be specified.
- Equipment not flush to a wall shall be set at least 0.6m away from any wall.
- Tanks, vessels, or equipment not mounted flush to the floor or plinth shall have a minimum of 300mm clearance between the base of the item and the floor to allow the floor beneath and the underside of the equipment for cleaning and inspection.

Other requirements:

- The design should avoid creating areas where pooling and subsequent evaporative drying of moisture can occur, leading to a concentration of undesirable residues.
- Due consideration should be given to possible galvanic corrosion effects arising from contact between dissimilar metals and alloys or metals and conductive non-metals such as graphite seals.
- Suitable allowances should be made for thermal expansion and contraction between various grades of stainless steels and other materials, for example, in stiffeners supporting plant or equipment.

- Stairways, handrails, platforms, and walkways shall be designed, fabricated, and installed by the current national standards and regulations.
- Insulation required for vessels or pipes operating at non-ambient temperatures shall be chloride-free.
- Insulation must be protected from water and physical damage by outer cladding.

Sensible material grade selection

Processes play a major part, along with the intended product, in determining grade selection. The following guidelines can be of assistance:

- Generally, hygienic process plants will be constructed from grades 304/304L or 316/316L stainless steel.
- Carbon content, by default, shall be 0.08% or lower for materials less than 3mm and less or equal to 0.03% for materials that exceed 3mm. This is to avoid sensitization and consequent risk of intergranular corrosion in welded components.
- Grade 304 stainless steel is suitable for continuous contact with chlorides up to 200ppm at ambient temperature.
- Grade 316 stainless steel is used for heavier corrosive conditions up to 1000ppm chloride contact at ambient temperature.
- For hot water systems, a material such as the Duplex Grade 2205 should be considered for temperatures over 55°C.
- Slicers, cutters, and blades are usually made from martensitic stainless steel, which is hardened by heat treatment in the same manner as carbon steel.

- If equipment is intended for cryogenic service, it will require the use of austenitic stainless steels such as 304/304L or 316/316L.

Take care of the material

Stainless steel material is valuable and comes at a higher cost than standard carbon steel. Proper care of the material remains important in storage and the fabrication area. Consider the following:

- The fabrication methods and techniques should not cause any damage that would lead to reducing the designed service life.
- Stainless steel products should be stored separately from mild steel and from other materials that can result in contamination.
- Contamination of stainless steel products by carbon or carbonaceous materials is to be avoided, especially if the material is to be welded. This includes oil, grease, crayons, marking pens, and paint.
- Do not walk on unprotected stainless steel products.
- Stainless steel products awaiting fabrication should be stored inside. If stored outside, they must be protected from the weather.
- All stainless steel tube and tube fittings shall be protected from damage, contamination, and marking (scratching) during storage.
- Tube and pipe should be handled carefully to prevent distortion.
- Handle, and store, flat and tubular materials in boxes or strapped bundles and in well-supported racks where possible.
- Maintain identification markings. Requirements for batch traceability should be specified by the purchaser.
- All tubes and fittings should be stored with the protective plastic wrap provided for shipping and delivered intact, and preferably in their timber shipping container.
- Tube end caps or plastic bag protection should always kept in place to avoid any internal damage or contamination.
- If carbon steel or galvanized straps are used, they must be prevented from touching the stainless steel.



Make sure of weld integrity

Welding is regarded as a special process. As such, each weld will have specific parameters and technical requirements. The following list points out some important points:

- Carbon steel should not be welded directly to stainless steel if it is going to be exposed to wet or humid conditions.
- When joining carbon steel to stainless steel, an intermediate stainless steel doubler plate shall be used that shall not exceed the parent material's thickness.
- Welds should be located away from highly stressed or cold worked areas such as bends and knuckles.
- Welds should not cross, as the residual longitudinal stress in the welds will cause a highly stressed region.
- Fillet weld attachments shall not be welded over butt welds.
- Lap joints and intermittent fillet welds shall be avoided because of crevice and contamination issues.
- Heat tint not only reduces corrosion resistance but also degrades cleanability and may increase microbial activity. It should be removed by either mechanical or chemical means, and the surface roughness in these areas should be restored as closely as possible to the original condition.

Consumables:

- All welding consumables must be handled by the manufacturer's instructions and maintained clean and dry.
- Protect MIG wire spools - these are easily broken, making the wire unusable.
- Maintain packages in unbroken condition as long as possible.
- Flux-coated electrodes require careful storage - refer to the instructions from the manufacturer.

Finishing welds by restoring the surfaces

- Where welds are accessible and are not required to be ground flush, they shall be manually wire brushed, while still warm after welding to remove thick slag and flux residues, followed by pickling. This can be followed up with finer abrasives.
- Pickling chemicals shall not be left in contact with the material for a period exceeding that recommended by the manufacturer. All residues shall be completely removed using fresh, clean water.
- Alternatively, where required, welds on the product contact side shall be ground flush and polished to the appropriate Ra. The surface is abraded using successively finer grit to the required roughness. The abraded strip along a weld must be wide enough to remove any heat-degraded surface oxides. A final passivation process is required to remove internal and external contaminants.
- Note that weld roots and interior heat-affected zones of welds that cannot be ground and polished shall be protected from oxidation by back purging during welding.



This is critical as heavy heat tint caused by poor purging is extremely difficult to remove by chemical pickling alone.

- Reduction of parent material thickness during grinding and polishing shall not exceed the greater of 0.25mm or 5% of material thickness.
- During grinding and polishing, localized heat build-up or "blueing" of the material shall be avoided.
- Iron-free particles shall be used for all shot or abrasive blasting processes. If abrasive blasting is used to remove heat tint, the surface roughness is normally increased, and care is required to ensure the Ra requirements are satisfied. Note that the metal flow caused by the impact of the abrasives may trap blasting debris and form crevices which promote corrosion and limit cleanability.

As mentioned, the guidelines and practices stated in this article are just the tip of the proverbial iceberg when starting to look at the full requirement for the fabrication of hygienic process equipment.

This article is therefore aimed at raising awareness amongst fabricators on the issues to truly deliver on the expectations of the hygienic industry. SASSDA is working on a South African code of fabrication best practices for the hygienic industry, which will assist members to be world-class and globally competitive in the future.

For more information on the development of these codes e-mail michel@sassda.co.za



Seizing Opportunities in SA's Stainless Steel Industry

The stainless steel industry in South Africa faces a myriad of challenges, from electricity supply issues to global market volatility and supply chain constraints. Despite these hurdles, Sassda remains committed to navigating these difficulties and fostering growth within the sector. This article explores the most pressing issues confronting the industry, the impacts of imports and supply chain limitations, and the strategies Sassda is implementing to stimulate local demand and ensure long-term sustainability and competitiveness in 2024 and beyond...



and Eastern Europe still creates uncertainty and from the East, we receive reports of increasing nickel prices with high volatility. All of this affects the industry to varying degrees. As Sassda we can only try to stay abreast of international trends and keep our members informed.

What are the most pressing challenges currently facing the stainless steel industry in South Africa, and how is Sassda addressing these challenges?

The electricity supply in South Africa has returned to stability and this performance can be sustained. This was most likely the biggest challenge facing the industry together with low economic growth and development. Global volatility has markedly affected stainless steel markets, and South Africa is not immune to it. The ongoing conflict in the Middle East

How are current supply chain constraints impacting the South African stainless steel sector, specifically within the port and rail sectors (Transnet limitations) and what strategies can be implemented to mitigate these issues?

We have just had a successful national election that will be a roadmark in the resurgence of the South African economy as it's believed that a more balanced approach will be the hallmark of the new government of national unity. If this

is the case, the rail and road freight issues in the country will be one of the first things to be addressed. This would be critical since the importance of global logistics cannot be underestimated for the economy and our sector. South Africa does not import large amounts of stainless steel primary material. Perhaps the positive part of the delays in cargo handling at the ports will slow the ingress of imported finished goods. The inputs of experts outside the government sphere, and the partnerships with the private sector will be the key, to improving the rate of imports and exports. This is not only important to our industry but even more so for industries that ship perishable goods. As alluded to, the ports are of national importance and should be addressed by the new government with a compensating level of concern and attention.

What effects have imports had on the local stainless steel market, and what measures can be taken to protect and strengthen the domestic industry? How is Sassda working to alleviate this stress point for the local industry?

In an ideal world, imported finished goods should create competition for local suppliers. Our members should be globally competitive not only in selected international markets but also locally. That said, South Africa still faces a problem created by imported finished goods made of inferior quality material, at costs that make no financial sense for local suppliers. It remains a focus for the association to put a stop to this, by assisting the Southern African Iron and Steel Institute (SAISI) with stainless steel related information that is intended for the training of customs staff. Sassda also studies and verifies import statistics supplied by SARS and addresses any anomalies identified. Sassda assists the metal desk of the dtic by supplying vendor information when import exemptions on stainless steel product imports are received from local entities, bound by local content regulations.

In your opinion, what steps are necessary to stimulate local demand for stainless steel products in South Africa? Please elaborate on the latest work Sassda is doing in various sectors and with various bodies to achieve this stimulus?

While we have various initiatives underway aimed at creating jobs and an increase in local consumption tonnage, these projects take time and do not offer a long-term guideline to make our sector a growing and sustainable sector. The Steel Master Plan recognises that the stainless steel sector offers good potential, and that consideration should be given to the development of its sectoral master plan. This is not only a suggestion but a real goal. This would be the only way to get enough exposure and government buy-in to ensure government procurement and increased local content demands for public projects.

How can industry stakeholders, including manufacturers and policymakers, work together to ensure the long-term sustainability and competitiveness of the South African stainless steel sector?

The concept of public private partnerships is not new and is widely accepted by the private sector. To date, public entities have been slow to take up the relevant opportunities. We have seen how the private sector contributed to the stabilisation of the electricity supply by investing in renewables. We hope that the new government will also see the potential and the willingness of the private sector to contribute to the future of the country. It is a matter of putting the country first and there is an expectation that the newly formed government would be able to facilitate these processes and cooperation.

What opportunities for growth do you see in the South African stainless steel sector in 2024 both in terms of new markets and technological advancements?

Our sector is diversified, and no single opportunity can be seen as a make or break for the industry. At Sassda we still see potential growth in the structural use of stainless steel including the Eskom transmission towers and rural bridges initiatives. We also see the potential for creating a new fabrication industry flowing from our work in getting beer kegs localised. The resurrection of our hollowware industry is still possible. The short answer to the question is that there is a lot of potential all over the economic landscape. We need a long-term strategy accepted by the government and other organisations and stakeholders to fully unlock a brilliant future.



Navigating Challenges in Stainless Steel: EMV Africa's Strategic Response

EMVAfrica, a notable player in the stainless steel, special alloys and valves sector, is navigating a turbulent year marked by economic uncertainty, currency fluctuations, and logistical challenges. Amidst a slowdown in project awards and supply chain disruptions, EMVAfrica has strategically diversified its product offerings and bolstered its inventory to meet evolving market demands.

The state of play

ENERGYMetals & Multi Alloys Business Unit Manager **Clinton Lautenberg** says the stainless steel industry has faced numerous challenges in the first half of this year and highlights several key issues. He comments "The uncertainty over the elections led to a lot of Capex being shelved by the big users of the product. We've also had to deal with fluctuations in currency and logistics issues at the ports."

He adds that these factors have contributed to a slowdown in project awards, with many initiatives being put on hold. "The number of projects awarded was minimal. There was a lot of quoting and feasibility studies happening, but not much else. This uncertainty has particularly impacted sectors like refineries and mining, which are major consumers of our products."

Overall EMVAfrica's business is split into three divisions: ENERGYMetals, ENERGYValves and Multi Alloys. While markets overlap significantly, the valve side tends to experience more frequent project work than the other divisions. ENERGYValves Business Unit Manager Anesh Prithilall says; "The valves are replaced more frequently than actual pipelines," highlighting the nuanced demand patterns within the company's operations.

Strategic initiatives and adaptations

Despite these challenges, EMVAfrica has taken proactive steps to mitigate their impact and has expanded its product range and increased stockholding to ensure availability and meet market demands. "We've added supplementary

products to our range to go after more niche markets. We're well established in our core products, but diversification is key," Lautenberg explains.

A major initiative has been the integration of new instrumentation products and an expanded range of valves, including both manual and actuating options. This leadership position is reinforced by EMVAfrica's commitment to maintaining a diverse and robust inventory, ensuring that it can meet the specific needs of its customers promptly.

This expansion aims to provide a more comprehensive solution for clients, reducing their need to source products from multiple suppliers.

Digital integration

EMVAfrica has also committed to technological innovation, evident in its fully integrated procurement model. This system links its CRM, invoicing, and logistics operations, providing real-time updates and ensuring seamless operations. "Our system is fully integrated, so every night the various components 'talk to each other' and update automatically. This integration allows us to provide accurate and timely information to our clients," explains Prithilall.

Advanced buying software also generates weekly reports to guide purchasing decisions. This ensures that stock levels are maintained, and products are available when needed, despite the logistical challenges.

In addition, logistics are supported by a sophisticated tracking system provided by their freight forwarding

company. This system allows for the monitoring of shipments in real-time, providing customers with up-to-date information about their orders. “Our freight forwarding company has a new system where you can literally track your order to an hour ago,” says Lautenberg.

Getting to grips with logistics

Logistics remain a critical challenge particularly with container vessel availability and port congestion. However, EMVAfrica has implemented innovative solutions to mitigate these issues including diversifying its supply sources, not relying solely on China. It now buys from India, Korea, the States, and Europe to ensure it can meet clients’ needs.

This diversification strategy has proven effective in the maintenance of supply continuity and manage costs. Shipping costs from China have skyrocketed, but the diversified procurement approach has helped manage these fluctuations better. EMVAfrica has also benefited from improved conditions at the Durban port, where waiting times have been significantly reduced. Durban’s Pier 2 waiting period has dropped from 28 days to 9 days in the last three months.

Success stories

This strategic approach is also exemplified in several key projects. A notable example is the turnkey supply for a Zinc Mine in the Northern Cape. Prithilall explains the company supplied the first phase two years ago and is now busy with the second phase. This project involved a full turnkey solution, including independent inspections and compliance with stringent specifications.

Another significant project involved supplying materials for a nuclear plant water treatment facility in the UK. Despite facing delays and logistical challenges, EMVAfrica successfully delivered the required materials, demonstrating its capability to handle complex international projects. This project required the supply of materials conforming to strict nuclear standards, and the company’s extensive network of suppliers and commitment to quality ensured that all specifications were met.

Proactive problem solving

A key element of EMVAfrica’s strategy is its proactive approach to problem-solving and strong relationships with clients. It tries to be proactive rather than reactive, anticipating client needs and providing solutions before issues arise. The ability to offer a wide range of products from stock has also been a critical factor. Increased stockholding and the addition of new grades, alloys and valve solutions ensure that EMVAfrica has what the market demands, positioning it as a reliable partner, capable of delivering under tight deadlines.

This strategy is also built on strong partnerships with suppliers and logistics providers. This is underpinned by the

view that its suppliers are as important as its customers. This has seen the creation of long-term relationships with suppliers around the world to ensure a steady supply of high-quality materials. An example of this, is the relationship with its freight forwarding company that handles all air freight, sea freight, and courier services. This partnership has been in place for over 30 years and is crucial for operations.

EMVAfrica’s global reach is further enhanced by participation in international trade fairs and exhibitions. EMVAfrica is constantly looking to add to its portfolio and plans to visit Germany next year to explore new suppliers and expand its product range.

Future outlook and strategic goals

Looking ahead, EMVAfrica remains optimistic about its role in the South African stainless steel sector. There is confidence in the country’s potential, particularly in mining, which is seen as a key growth area. Foreign investment is expected to return, and the company is well-positioned to capitalize on that.

It is also focused on exploring new markets and diversifying its product range further. This ongoing expansion is supported by a commitment to maintaining high standards of quality and service. The ultimate goal is to be more than a supplier - a solution provider, committed to providing clients with the best possible products and services, and confident in meeting future challenges.



The Zephyr Pioneer - Take a train ride back to the future



Anyone watching a 1920 Model T automobile jerking and backfiring down the road would find it hard to believe that the object of so much derision would one day threaten the very existence of the railroad as a passenger carrier. But that is exactly what happened

In 1924, the Burlington Railroad carried a whopping 18-million passengers. Only five years later, as the automobile's popularity increased, that figure dropped to 13.8-million. And by 1933, amid the Great Depression, only 7-million travellers rode the rails. Passenger revenues followed a parallel descent. To the amazement of many, the railroad, with a tradition as grand as any in America, was slowly being replaced by an army of 30 mph automobiles.

Luckily for the railroad industry and the travelling public, a figure appeared on the scene in the early 1930s, with the knowledge and determination to build a train to meet the demands of the 20th century traveller. His name was Ralph Budd, and he became president of the Burlington Railroad in 1932.

By the time Budd arrived at Burlington Railroad, the automobile had edged out trains as the favoured means of transportation, even for long distance travel. Budd was among the first to admit that "the loss of railway passenger traffic during the last decade has been caused by a shift from the railways to the highway, and not from a decline in

total travel. The total passenger one-mile units of travel have increased."

Budd reasoned that since automobile engineers had derailed the passenger train, they could be the ones to put it back on the tracks. Such thinking implied the use of a kind of automotive internal combustion power instead of the steam locomotive, upon which the industry had relied for a century.

Stainless steel enters the rail transport industry

One of Budd's first moves was to visit the Edward G. Budd Manufacturing Company in Philadelphia. Ralph Budd was not related to the company which had been the first to produce all-steel automobile wheels and the all-steel automobile body. Now it was ready to tackle passenger train construction.

At the Budd Co. plant, the Burlington president examined a test rail car body, incorporating several radical innovations, including a gas engine and rubber tyres. Budd



immediately dismissed these alterations as impractical. What caught his attention was the rail car's stainless steel construction. The material was lightweight yet strong, and it lasted forever. The problem was that no one had been able to figure out a way to build stainless steel rail cars in a practical shop operation. Fortunately, the Burlington president's timing was exactly right. The Budd Company had just patented its newly devised "Shotweld Process." The system allowed rivet-less seams of stainless steel to be joined without reducing its corrosion-resistant qualities.

At the same time, it provided a joint stronger than the steel it held together. Ralph Budd knew a good product when he saw one. He decided this would be the material for the new train he wanted to build to recapture the rail passenger market. On June 17, 1933, barely a year since he first stepped into office, Ralph Budd signed a contract with the Budd Co. to construct a train out of stainless steel. The firm was given free rein in the design of the train.

Grade selection considering mechanical and physical properties:

The first stainless steel railcars were made from an austenitic alloy produced by Allegheny and classified by Budd as 18-8 steel, consisting of 18% chromium and 8% nickel. High carbon content made this stainless steel susceptible to chromium carbide precipitation in the HAZ of welds and to subsequent intergranular corrosion. The need to limit dwell time, in the critical temperature range, motivated for Budd's experts to invent the short-time spot welding process ('shotweld').

In the 1950s, 201 and 202 steels were also applied. In their chemistries, a substantial part of the nickel is replaced with manganese. Later, 17-7 Type 301 steel was introduced. In the 1980s, the advent of argon-oxygen decarburization allowed the fabrication of low-carbon stainless steels containing less than 0.03% C. This carbon level prevents the sensitization of stainless steel caused by welding, either with resistance or fusion processes.

Notably, Duplex stainless steels have the potential for application, because of their high strength in larger thicknesses. However, they will not become popular in the production of railcars. They are more expensive than austenitic steels, and in lower thicknesses (up to about 5 mm), cold-worked austenitic materials are stronger than duplex steels. Where larger thicknesses are required, high-strength, low alloy (HSLA) steels with yield strengths up to 700 MPa are commonly used.

The use of martensitic and ferritic steels is limited to non-structural applications. In typical descriptions of austenitic stainless steels, their mechanical properties are those in the annealed condition. However, the strength of these materials may be significantly increased by cold deformation, such as thickness reduction in cold rolling, forming, or bending. Deformation strengthening of austenitic steels results from the partial transformation of austenite into martensite.

The strengthening efficiency of cold rolling depends on the material thicknesses. For example, in thicknesses up to 1 mm, tensile strength close to 1300 MPa and yield strength (0.2% proof), close to 1000 MPa, may be achieved. For 5-mm thick materials, the achievable values are 1000 and 750 MPa, respectively. The high strength-to-weight ratio allows for cold-worked stainless steel to be considered a lightweight material.



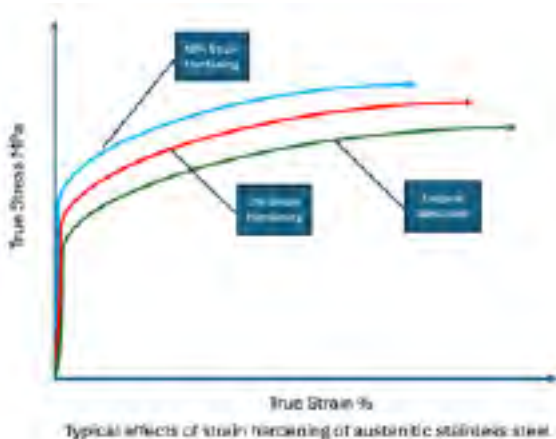
Austenitic stainless steels can be bent with ease. Even in the cold-worked condition, the material may be safely bent with a radius equal to twice its thickness. The formability of austenitic steels is strongly dependent on the initial condition of the material. Annealed material can be formed without difficulty, while the forming potential of cold-worked materials is limited. If material is to be formed, its final properties resulting from deformation may be considered for design.

Three properties of austenitic steels are important for resistance welding - electrical resistivity, thermal conductivity, and the coefficient of thermal expansion. Compared to carbon steel properties, austenitic steels have a resistivity five times higher, thermal conductivity three times lower, and thermal co-efficient one-third higher.

During welding, austenitic stainless steels do not undergo the γ - α transformation, which ensures their good metallurgical weldability. A limited recrystallization occurs in the HAZ, leading to some softening. However, this has no consequence on the strength of resistance welds. The HAZ remains ductile in all cases.

In either a peel or chisel test of spot welds, a well-defined button is always obtained. The high resistivity of austenitic steels allows for rapid obtaining and growth of the weld nugget. This is further enhanced by the low thermal conductivity, which limits heat sinking into the surrounding material.

As a result, low amperages are required, and spot-welding multiple part combinations of a large total thickness are possible. The high coefficient of thermal expansion results in a tendency to produce nugget shrinkage discontinuities as well as high residual stresses in welds and distortion of assemblies. To prevent both occurrences, high forging forces are applied.



Power for a new era in rail transport

Budd needed a power unit for his stainless steel train, to replace the hopelessly outdated steam engine. The expertise of no less than three firms was brought to bear on the problem of building a two-cycle diesel engine to meet the demands for train engines with increased horsepower. The work was led by the General Motors Co., which was aided by the company's 1930 acquisition of the Winton Engine Co. and railcar builder Electro-Motive Co.

A major turning point occurred in 1933, when the Kettering team's eight-cylinder, 600-hp, 8-201 engine, with a weight-to-power ratio of only 20 pounds per horsepower, was chosen to supply power to the Chevrolet exhibit at Chicago's "Century of Progress Exposition."

While visiting the fair, Ralph Budd came upon the display and immediately decided that the lightweight diesel engine would provide the power for his all-new, all-important passenger train. As Budd saw it, the diesel railroad was the railroad of the future and if any company could put the diesel engine in a train, it was General Motors.

Approximately one year later, on May 26, 1934, the Pioneer Zephyr No. 9900 made its grand debut with a record-setting 1,000-mile dawn-to-dusk run from Denver to Chicago in 13 hours. Appropriately enough, the Zephyr was named after the Greek god of the west winds. It was designed for speeds of approximately 110 mph. Not only was the Pioneer Zephyr faster and lighter than its predecessors, but it also reduced Burlington's cost of passenger train operation. A new era in railroading history had begun.



The interior revolution

The high operating standards of the world's first high-speed, diesel-propelled stainless steel three-car train were matched by the Zephyr's painstaking interior furnishings.

The first car held a diesel engine, an engineer's cab, a 30-ft. railway post office, and space for baggage.

The second car carried a larger baggage compartment, a buffet grill and, at the rear portion of the unit, a 16-ft.



smoking section with seats for 20 passengers. Third and last was a 31-ft. compartment with seats for 40 persons, and a solarium lounge with chairs for 12.

Before the Pioneer Zephyr, the travelling public knew only ornate but gloomy railroad car interiors. All that changed with the high-stepping Zephyr. Each compartment had a distinctive colour harmony coordinating wall colours, window drapes, upholstery, and floor covering. But more important than the Zephyr’s looks, were the uplifting effect it had on a mid-Depression America and its effect of reaffirming the faith of the people in the free enterprise system.

A tradition established, a future defined

In addition to its technological achievements, the Pioneer Zephyr led to a revival of the public’s interest in rail passenger service. Settled comfortably in the welcoming arms of the modern train, thousands of Americans watched the nation’s prairies, mountains, and forests fly by. Glamour queens of the era liked nothing better than to make a grand entrance into town by rail, greeted by crowds waiting on the station’s platform.

Stainless steel remains a cornerstone material in modern rail transport. It is the standard material for rail applications all over the world especially in Japan and the USA. Modern technology developments and the importance of life cycle costing, make stainless steel an attractive option for rail cars.

Today stainless steel is used in a wide range of railway applications. Regional, commuter, metro, underground and light rail trains depend on stainless steel for solutions. Material selection and design criteria are affected by the specific operating conditions and many of these are met by stainless steel. As such, stainless steel should be used whenever corrosion resistance, fire safety, ease of cleaning, minimal maintenance and visual attractiveness are key requirements.

Stock type	diesel-electric passenger one-directional trainset
In service	1934–1960
Manufacturer	Budd Company
Constructed	1934
Entered service	November 11, 1934
Number built	1 trainset (3 cars)
Formation	1: cab/engine/storage 2: baggage/RPO/buffet/coach 3: coach/observation
Fleet numbers	9900
Capacity	72 passenger seats, 25 long tons (25 t; 28 short tons) of baggage
Operators	Chicago, Burlington and Quincy Railroad
Specifications	
Car body construction	stainless steel
Train length	197 ft 2 in (60.10 m)
Car length	74 ft 0.125 in (23 m) (power car) 57 ft 8 in (17.58 m) (intermediate car) 63 ft 6 in (19.35 m) (rear car)
Width	9 ft 1.0625 in (277 cm) (body) 9 ft 10 in (300 cm) (handrails)
Height	12 ft 1.1875 in (369 cm)
Wheel diameter	36 in (910 mm) (drive wheels), 30 in (760 mm) (ride wheels)
Weight	208,061 lb (94,375 kg)
Prime mover(s)	EMD 201A
Engine type	diesel
eCylinder count	8
Cylinder size	8 in (200 mm) bore, 10 in (250 mm) stroke
Traction motors	2
Power output	660 hp (490 kW)
AAR wheel arrangement	B-(2+2)-2
Wheels driven	2
Bogies	1 motor bogie, 2 non-motor Jacob's bogies, 1 non-motor bogie
Seating	open coach (2+2), observation lounge
Track gauge	4 ft 8+1/2 in (1,435 mm)



Good neighbours! Investment Opportunities in Zimbabwe, Eswatini & Mozambique

As the South African stainless steel sector seeks new avenues for growth and investment, neighbouring African countries offer promising opportunities. Zimbabwe, Eswatini, and Mozambique, each with their unique economic landscape, present compelling prospects for the sector to expand its footprint and contribute to regional development. Here's a closer look at the investment landscapes in these countries and the potential they hold for South African stainless steel...

ESWATINI (formerly Swaziland): Fostering Inclusive Development and Infrastructure Growth

Eswatini, a small, open economy bordering South Africa and Mozambique, offers a conducive environment for investment. The country's focus on renewable energy and energy efficiency investments presents a strategic opportunity for the South African stainless steel sector to contribute to Eswatini's sustainable development goals.

Investment potential

• Infrastructure Projects - Eswatini's ambitious infrastructure projects, such as the International Convention Centre and various highway developments, require high-quality materials like stainless steel. By partnering with local

stakeholders, South African companies can participate in these projects, driving economic growth and enhancing regional cooperation

• Renewable Energy - Eswatini's investment in renewable energy projects offers opportunities for the South African stainless steel sector to supply materials and technology for solar panels, wind turbines, and other renewable energy infrastructure.

Strategic advantages

• Inclusive Development - Eswatini's commitment to inclusive development, supporting smallholding farmers, women, youth, and vulnerable groups, aligns with the South African stainless steel sector's values. By investing in Eswatini, companies can not only expand their business but also contribute to social and economic empowerment in the region.

• Stable Investment Climate - Eswatini's stable political environment and pro-business policies make it an attractive destination for foreign investment. The government's initiatives to improve the ease of doing business and infrastructure development further bolster this appeal.



ZIMBABWE: Overcoming Energy Challenges to Drive Ferrochrome Industry Growth

Zimbabwe boasts abundant mineral resources, including gold, platinum, and chrome. The ferrochrome industry holds significant potential for growth but faces challenges, notably inadequate power supply. To address this, Zimbabwe's ferrochrome miners have agreed to build their own power plants over the next two years, ensuring long-term sustainability for the energy-intensive sector.

Investment potential

- **Ferrochrome Industry** - The South African stainless steel sector can benefit by supplying the necessary technology and equipment for these new power plants. This investment would not only support Zimbabwe's energy needs but also strengthen the ferrochrome industry's output, creating a robust supply chain for stainless steel production.
- **Green Energy** - The Zimbabwean government's push for green energy further enhances investment prospects,

aligning with global trends towards sustainable practices. South African companies specializing in renewable energy solutions can explore opportunities

Strategic advantages

- **Rich Mineral Resources** - Zimbabwe's vast mineral wealth makes it an attractive destination for investment in stainless steel production. The country's chrome deposits are particularly valuable for the stainless steel sector.
- **Geographic Location** - Strategically located in Southern Africa, Zimbabwe offers easy access to regional markets, enhancing its appeal to investors looking to expand their presence in the region. This facilitates smoother logistics and distribution of stainless steel products across Southern Africa.



MOZAMBIQUE: Expanding LNG and Hydropower Projects



Mozambique's strategic location and natural resources make it a key player in the energy sector. The resumption of the Total Energies LNG project and Eni's Coral North FLNG Project signifies Mozambique's commitment to expanding its LNG production capacity. This presents an opportunity for the South African stainless steel sector to supply materials for these projects, supporting infrastructure development and job creation.

Investment potential

- **LNG Projects** - Mozambique's growing LNG industry requires significant infrastructure development, including pipelines, storage tanks, and processing facilities. The South African stainless steel sector can supply the necessary materials, leveraging its expertise in producing high-quality, durable products.
- **Hydropower Projects** - The Mphanda Nkuwa hydropower project, aimed at harnessing the Zambezi River's potential, offers long-term investment prospects. The project's construction and operation will require a range of stainless steel products, from pipelines to turbines, giving a significant opportunity to South African suppliers.

Strategic advantages

- **Natural Resource Wealth** - Mozambique's abundant natural gas and hydropower potential make it a strategic location for energy investments. South African companies can use their proximity and expertise to become key suppliers in these growing sectors..
- **Infrastructure Development** - Mozambique's focus on developing its infrastructure to support the LNG and hydropower projects offers numerous opportunities for the South African stainless steel sector. By participating in these projects, companies can secure a foothold in Mozambique's expanding energy market.



Conclusion

In conclusion, Zimbabwe, Eswatini, and Mozambique present promising investment opportunities for the South African stainless steel sector. By leveraging their expertise, technology, and high-quality materials, South African companies can play a vital role in supporting these countries' economic development while expanding their presence in the region.



Key Takeaways

- **Zimbabwe** - Investment opportunities in the ferrochrome industry and renewable energy sector offer significant potential for growth, driven by the country's mineral wealth and strategic location.
- **Eswatini** - The focus on infrastructure and renewable energy projects, coupled with a stable investment climate, makes Eswatini an attractive destination for the South African stainless steel sector.
- **Mozambique** - Expanding LNG and hydropower projects, provide lucrative opportunities for South African companies to supply materials and expertise, supporting Mozambique's energy sector development.

By strategically investing in these neighbouring countries, the South African stainless steel sector can not only achieve growth and diversification but also contribute to the broader regional economic development and integration in Southern Africa.



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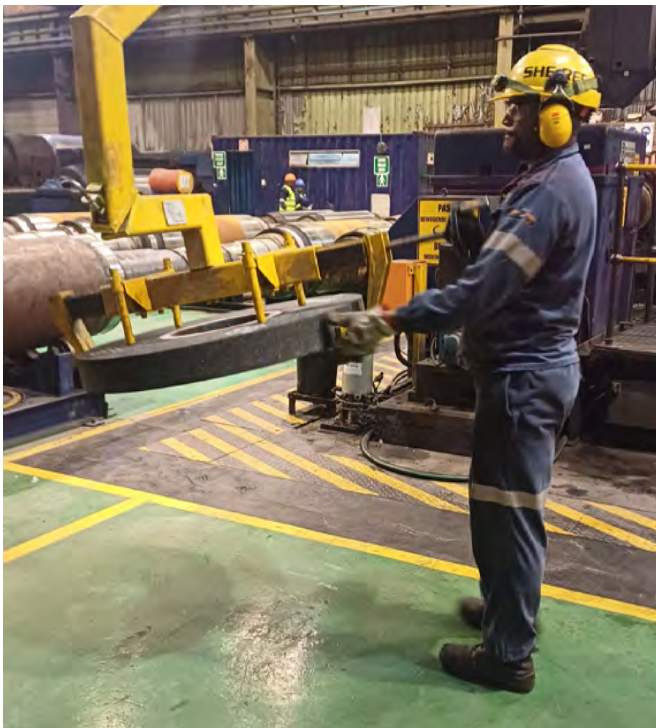
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Columbus Stainless Grinding Solution Wins Top Industry Award

The 2024 World Stainless Steel Association Annual Awards, recognising outstanding achievements in market development, technology, safety, and sustainability, were recently announced. Since 2010, the association has celebrated good practices and innovative ideas across these fields, acknowledging the dedication and ingenuity within the stainless steel industry.



This year, a wave of excitement swept through the industry as Columbus Stainless, a leading name in stainless steel production, was recognised with a Silver Award for its groundbreaking Grinding Wheel Tilting Solution.

The invention was the brainchild of **Enock Linda**, an Artisan roll grinder in the Columbus Stainless hot mill. The team subsequently partnered with Steel and Stone Engineering to conduct the detailed design and construct a tilter, with the support of the Process Engineer **Anton Heiberg**. He elaborates, "Having suitable lifting equipment will afford us a chance to get rid of an old production way of working from the floor in our processes during the stripping and building of the grinding wheels."

This innovative invention has revolutionised the traditionally hazardous process of unpacking and transporting grinding wheels, ushering in a new era of safety and efficiency. This process improvement ensures efficient use of resources (personnel) and prevents

immediate and later injuries that may occur when handling a wheel, such as back strain during the hand lifting of the grinding wheel. It also stops task handovers, caused by the unwillingness due to ergonomic issues, and speeds up the process of building the wheel, so that the operator can focus on his roll grinding task.

The Grinding Wheel Tilting Solution is a testament to Columbus Stainless's commitment to industry advancement. It has not only earned the mill prestigious recognition but also solidified its reputation as a frontrunner in promoting safe and sustainable practices within the stainless steel sector.

Adding to this wave of accolades, Columbus Stainless CEO Johan Strydom has been appointed to the World Stainless Board, marking another significant milestone for the company and reinforcing its leadership in the global stainless steel industry.

**Issued by Columbus Stainless*

Forging the future: Sassda Shines at Machine Tools Africa Expo

Sassda recently participated in the Machine Tools Africa expo, a premier event in the manufacturing and engineering sectors. This participation highlighted Sassda's dedication to promoting stainless steel use and supporting industry stakeholders through advocacy, information dissemination, and strategic initiatives...



Significant participation

Sassda Head of Membership & Communication **Callum Sutherland** comments; "The Machine Tools Africa expo is a key event that brings together major players in the manufacturing, engineering, and metalworking industries. Sassda's presence was crucial for enhancing its visibility and networking with industry leaders and potential partners."

The expo also provided a platform for Sassda to showcase the latest advancements in stainless steel applications and innovations, positioning itself as a leader in driving industry progress. Additionally, Sassda engaged with attendees through seminars and workshops, educating them on the benefits and applications of stainless steel.

Business benefits

Sassda's participation resulted in several business benefits. The expo opened doors to new markets and opportunities by interacting with international exhibitors and visitors,

paving the way for export growth. It also facilitated strategic partnerships and collaborations with manufacturers and suppliers. Sutherland adds; "Sassda's presence reinforced its role in supporting its members, gathering insights into market trends and challenges to better advocate for them and provide targeted support."

Outcomes and future prospects

By actively participating in this high-profile event, Sassda strengthened its position as a leading voice in the stainless steel industry, attracting more members and stakeholders to the association.

"Sassda's involvement in the Machine Tools Africa expo was a strategic move yielding significant business benefits and positive outcomes. The expo enhanced Sassda's visibility, opened new growth avenues, and reinforced its role in driving the development and competitiveness of the South African stainless steel industry," Sutherland concludes.

SASSDA/SAIW Annual Regional Golf Days 2024: A Swinging Success

The Southern Africa Stainless Steel Development Association (SASSDA) and the Southern African Institute of Welding (SAIW) recently hosted two highly successful regional golf days, drawing industry professionals for a day of sport, networking, and camaraderie.

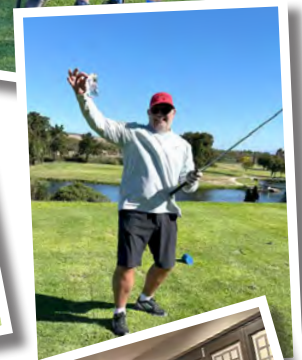
SASSDA/SAIW Western Cape Golf Day

The Western Cape Golf Day took place on 11 April 2024 at the picturesque Kuils River Golf Club. A total of 76 players took to the greens, enjoying a sunny day with no wind—perfect conditions for a round of golf. The event was followed by a well-attended dinner, hosting 110 guests.

The course featured 9 watering holes, ensuring that participants stayed refreshed throughout the day.

The success of the day was made possible by the generous support of the following sponsors:

- Columbus Stainless
- Steelbank
- SCI Aps
- Inox-V-Africa
- Macsteel VRN
- NDE
- Novametal South Africa
- Grinding Techniques
- Dekra
- Bestbier Inspection Solutions
- Fabrinox
- ESAB
- BAMR





SASSDA/SAIW KZN Golf Day

Just two months later, the SASSDA/SAIW KZN Golf Day was held on 13 June 2024 at the Royal Durban Club. This event saw a full field of 120 players and attracted 170 dinner guests, making it a larger gathering compared to the Western Cape event. The Royal Durban Club, known for its challenging course, featured 6 watering holes to keep the golfers hydrated and in high spirits.

This event also enjoyed robust support from several key sponsors, including:

- Columbus Stainless
- Steelbank
- NDE
- Euro Steel
- Macsteel VRN
- Natal Stainless Steel
- PtSA
- Apex Gas & Industrial Solutions
- Consort Architectural Hardware
- Franke

Both golf days provided excellent opportunities for industry networking and strengthening business relationships within the stainless steel sector. SASSDA and SAIW extend their heartfelt thanks to all sponsors and participants for their support and contribution to the success of these events. These golf days not only highlight the vibrant community within the stainless steel industry but also reinforce the collaborative spirit that drives its progress.