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the journal of the southern africa stainless steel development association

ISSUE 2 2026

DIGGING DEEPER INTO DEMAND

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STRENGTH**
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CASE STUDY:
Passive Layer. Active Risk



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Building a Stronger Future for South Africa's Stainless Steel Industry

During a recent Sassda Main Committee meeting, we reflected extensively on the future direction of South Africa's stainless steel industry and the strategic interventions required to strengthen local manufacturing capability in an increasingly competitive global environment.

A recurring theme throughout these discussions was localisation and the role it can play in rebuilding industrial capability, supporting local manufacturers and positioning South Africa's stainless steel sector more competitively for future growth.

In this issue of the magazine, readers will therefore notice several articles focused on localisation initiatives currently being explored across sectors such as hollowware manufacturing, food processing equipment, packaging systems and specialised industrial components. Together, these projects reflect a broader strategic drive aimed at strengthening local value addition and creating more sustainable industrial opportunities for the future.

Strengthened capacity

However, the reality is that South Africa's stainless steel industry continues to operate within a challenging environment shaped by slow economic growth, rising global competition, de-industrialisation pressures and changing international trade dynamics. Yet despite these realities, I remain convinced that significant opportunities still exist if we are prepared to adapt, collaborate and think differently about growth.

At Sassda, much of our focus during 2025 therefore involved preparing for this next phase by strengthening our internal capabilities, expanding our technical support structures and aligning our activities more closely with the strategic priorities identified earlier this year.

One of the biggest realities we have had to confront is that the South African market alone is simply not large enough to sustain long-term growth for the local stainless steel industry. While localisation and stimulating local demand remain critically important, we also need to position ourselves far more aggressively towards export markets and regional manufacturing opportunities.

This shift in thinking is already influencing many of the projects and initiatives we are currently driving. A strong example is the hollowware initiative currently under investigation in partnership with automotive manufacturers in the Eastern Cape. As the global transition towards electric vehicles disrupts traditional automotive component manufacturing, several local companies with advanced presswork capability are now looking to diversify into new manufacturing sectors.

At the same time, South Africa imports more than 20 000 t of hollowware products annually, much of it at

customs values that raise serious concerns regarding dumping and unfair competition. If we can successfully localise even a portion of this market, the potential benefits for local stainless steel consumption, industrial capability and job creation could be substantial.

Significant local expertise

These projects reinforce an important point. South Africa still possesses significant technical expertise, manufacturing skill and industrial capability. In many cases, the challenge is not a lack of ability but rather creating the right environment for local manufacturers to compete fairly and participate more effectively within global supply chains. This is why issues such as anti-dumping measures, localisation support and technical competitiveness remain so important.

At the same time, we also recognise that long-term competitiveness increasingly depends on technical compliance, certification and operational excellence. As a result, Sassda has expanded its consultancy and technical support services to assist members with welding quality systems, ISO 3834 implementation, ISO 9000 pre-audits and broader quality assurance support.

The response from industry has been encouraging, with growing recognition that international customers expect manufacturers to demonstrate not only technical capability, but also internationally recognised systems, standards and process discipline. We have also expanded our technical knowledge base significantly through the development of new publications and practical guidance documents covering coastal applications, mining applications and architectural stainless steel use. These initiatives are aimed at strengthening industry knowledge while helping prevent avoidable failures caused not by the stainless steel material itself, but by poor fabrication practices or incorrect application.

Alongside this, Sassda is strengthening its market intelligence capability and expanding its communication footprint across Africa. Our planned African market newsletter will provide members with improved access to project information, regional opportunities and market intelligence outside South Africa.

Ultimately, the future of the South African stainless steel industry will depend on our ability to remain resilient, adaptable and globally competitive. There are undoubtedly challenges ahead. Funding pressures, de-industrialisation and low-cost imports remain significant concerns. However, there are also clear opportunities emerging around localisation, regional manufacturing support, export growth and technical specialisation.

At Sassda, we remain optimistic about the future of the industry. The key now is to continue building momentum, strengthening collaboration and positioning South African stainless steel manufacturers to compete successfully both locally and internationally.

Michel Basson,
Sassda Executive Director



Market Intelligence to Boost Business Growth

Welcome to the highlights edition of the Sassta GPS eNewsletter, your go-to source for key developments shaping South Africa's business, industrial, and economic landscape. Each month we distribute this popular market intelligence aggregator to an exclusive database of members and associates. This selection of the best articles from the last quarter, aims to extend access to this quality content by prioritising the top stories from the latest issues...



Transnet Opens Bids for 25-Year Cape Town Liquid Bulk Terminal Concession

Transnet National Ports Authority (TNPA) has issued a request for proposals to appoint a private operator for a liquid bulk terminal at the Port of Cape Town under a 25-year concession agreement. The project includes the financing, operation, refurbishment and possible expansion of the existing brownfield facility, which is aimed at strengthening bunkering services, improving infrastructure efficiency and supporting regional fuel supply...

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Rail master plan outlines R2 trillion vision

Government's long-term rail master plan is set to cost nearly R2 trillion over the next 30 years, reflecting the scale of ambition to modernise South Africa's freight and passenger networks. The plan focuses on revitalising rail infrastructure, improving logistics efficiency and reducing pressure on road transport...

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Steel import duties raise supply concerns

New import duties on certain steel products are raising concerns about potential supply constraints and rising costs for downstream industries. While aimed at protecting local producers, the measures may have unintended consequences for construction and manufacturing...[Read more](#)



R20bn Cape airport boom set to lift Western Cape aviation capacity

More than R20-billion in airport investment is poised to reshape Cape Town's aviation landscape, with ACSA planning an estimated R11.3-billion upgrade of Cape Town International Airport while the privately owned Cape Winelands Airport prepares for an R8-billion to R10-billion development near Durbanville. The projects aim to support rising passenger demand, improve airport capacity and unlock broader regional economic activity...[Read more](#)

Solar industry warns against proposed blanket solar tax

The South African Photovoltaic Industry Association (SAPVIA) has cautioned against the introduction of a broad solar import tax, warning that poorly targeted measures could slow renewable energy adoption, raise costs for businesses and households, and undermine the country's energy transition goals. The industry body argues that while localisation remains important, policy interventions should support long-term industry growth without constraining solar deployment at a time of ongoing energy security concerns...[Read more](#)



Smelter shutdown risk highlights energy crisis

Another smelter is threatening shutdown due to crippling electricity prices, underscoring ongoing pressure on energy-intensive industries. High costs and supply challenges continue to impact production and competitiveness, raising concerns about job losses and industrial decline...[Read more](#)



Major automotive investment planned

A leading Indian company has announced a R600 billion upgrade plan for its South African manufacturing facility. The investment is expected to boost local production capacity, support job creation and strengthen the country's automotive sector...

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AfCFTA shifts toward operational trade system

The African Continental Free Trade Area is transitioning from policy framework to practical implementation, although persistent frictions remain. Progress in optimizing trade systems is expected to unlock new regional opportunities, despite ongoing logistical and regulatory challenges.....

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UAE firm eyes rail operations in South Africa

A United Arab Emirates-based company has unveiled a R2.8 billion plan to operate trains in South Africa, signalling growing private sector interest in the country's rail network. The move aligns with broader efforts to improve efficiency and attract investment into logistics infrastructure.....

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Massive private investment drive announced

Government has announced a major private investment drive aimed at unlocking infrastructure development and boosting economic growth. The initiative focuses on creating an enabling environment for investors while accelerating project rollout across key sectors.....

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Rebuilding Local Strength: How Stainless Steel Localisation Could Reshape South African Manufacturing

For South Africa's stainless steel industry, localisation is no longer simply a policy discussion or a theoretical economic ambition. Increasingly, it is becoming a practical industrial strategy focused on rebuilding manufacturing capability, creating jobs, strengthening supply chains and positioning local companies more competitively within global markets.

Across several sectors, including hollowware, packaging equipment, food processing technology and specialised industrial components, new opportunities are emerging to bring manufacturing activity back onto South African soil using local stainless steel, local skills and local manufacturing expertise.

For Sassa, these developments form part of a broader strategic drive to strengthen the long-term sustainability of South Africa's stainless steel value chain while unlocking new industrial growth opportunities.

Localisation Momentum

At the beginning of 2026, Sassa embarked on a focused localisation strategy aimed at steering the industry towards improved manufacturing competitiveness and stronger export participation.

The strategy is built around a relatively simple but increasingly important principle: South Africa possesses significant manufacturing skill, technical expertise and stainless steel processing capability, but far more value can still be unlocked by localising products and components that are currently imported into the country.

At the same time, global supply chains are changing. International original equipment manufacturers (OEMs) are increasingly looking for regional manufacturing



partners capable of reducing logistics costs, shortening supply chains and improving responsiveness to African and Southern Hemisphere markets.

This creates a unique opportunity for South Africa's stainless steel sector.

A recent example involved a European OEM seeking local manufacturing partners capable of producing specialised stainless steel components for packaging equipment. The objective was to reduce the cost and complexity associated with transporting European-manufactured components and spare parts into African markets.

Sassda facilitated discussions between the OEM and local member companies with the required capabilities, with the engagement reportedly progressing positively into supplier vetting processes.

Beyond the immediate project itself, the initiative highlights the growing role South Africa can potentially play as a regional manufacturing and support base for international companies.

Manufacturing Revival

Perhaps one of the strongest examples of localisation potential currently under discussion lies within the hollowware and catering products sector.

South Africa was once a significant producer of stainless steel hollowware products, including pots, pans and catering equipment. However, over the past two decades, the sector has experienced severe decline under pressure from low-cost imported products, particularly from China.

According to industry estimates, between 15 000 t and 20 000 t of catering and hollowware products are imported into South Africa annually, with China accounting for more than 96% of total imports.

“Between 15 000 t and 20 000 t of hollowware products are imported into South Africa annually, with more than 96% originating from China, highlighting the scale of the localisation opportunity.”

For Sassda, the concern extends beyond import volumes alone. The hollowware industry historically represented an important area of local stainless steel value addition, manufacturing activity and employment creation. Its decline has contributed to significant de-industrialisation within the sector.

At the same time, global changes within the automotive industry are creating unexpected new opportunities.

As the global shift towards electric vehicles places pressure on traditional automotive component manufacturers involved in exhaust systems and catalytic converters, several South African automotive suppliers are now exploring diversification into other manufacturing sectors that can utilise their advanced presswork technologies and production capabilities.

Sassda is currently working with major automotive component manufacturers to investigate whether this world-class automotive manufacturing expertise can be applied to local stainless steel hollowware production.

The opportunity could be substantial. Industry estimates suggest that successfully rebuilding even part of the local hollowware sector could potentially localise up to 20 000 t of stainless steel consumption annually while creating significant employment opportunities across skilled, semi-skilled and lower-skilled labour categories.

“Rebuilding even half of the local hollowware market could create more than 30 000 sustainable jobs while significantly increasing local stainless steel consumption.”

Importantly, hollowware manufacturing is also viewed as particularly labour intensive and capable of supporting large-scale job creation. Sassda estimates that reclaiming even half of the current market could potentially create more than 30 000 sustainable jobs.

Skills And Scale

One of the key themes emerging across these localisation initiatives is the importance of technical capability and manufacturing expertise.

South Africa's stainless steel sector continues to possess highly skilled fabricators, welders, manufacturers and technical specialists capable of producing sophisticated industrial products and components.

In another localisation initiative, Sassda assisted in facilitating the potential local manufacture of specialised food processing components linked to technology originally developed in South Africa before later being acquired by international companies.

Although the equipment had continued to be manufactured overseas, much of the technical knowledge and support infrastructure remained rooted locally.

One of the primary challenges involved material specifications requiring stainless steel grades not readily available within South Africa. Sassda provided technical support to adapt these specifications to locally available stainless steel materials, opening the door for local production opportunities.

The initiative also demonstrated the growing role advanced stainless steel grades can play in sectors such as food processing, packaging equipment and specialised industrial applications where corrosion resistance, hygiene and durability are critical.

Importantly, localisation does not only benefit manufacturers themselves. When components, products or systems are manufactured locally, the economic impact extends throughout the broader stainless steel value chain, including material suppliers, welding consumable suppliers, abrasives suppliers, logistics providers and technical service companies.

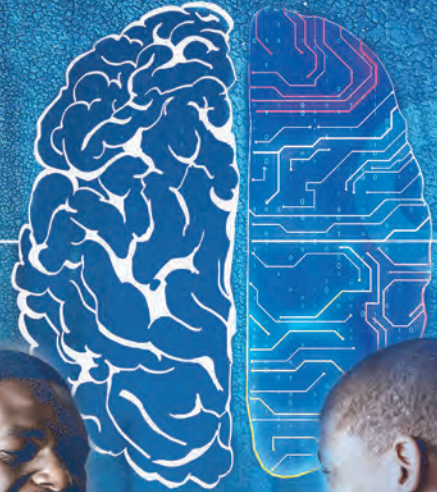
It also exposes local companies to international standards, new technologies and export-focused manufacturing disciplines.

Competitive Pressures

While the opportunities are significant, the challenges remain equally real.



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Sassda continues to express concern around anti-competitive import pressures and unfair customs values associated with certain imported stainless steel products.

Analysis of recent import data indicates that hollowware imports from China entered South Africa during 2024 and 2025 at customs values averaging approximately R22/kg, compared with approximately R103/kg for imports from India.

When compared against the base material costs associated with common stainless steel grades such as 430, 304 and 316, the pricing disparities raise serious concerns regarding fair competition within the local market.

While Sassda does not support blanket tariffs across all stainless steel imports, the organisation believes stronger enforcement against anti-competitive practices remains essential to protecting local manufacturing capability.

At the same time, support mechanisms such as the Localisation Support Fund, engagement with the International Trade Administration Commission of South Africa (ITAC) and strategic cooperation with government and retailers are viewed as increasingly important components in rebuilding industrial capacity.

Retailer participation is expected to play a particularly important role within the hollowware sector, where large retail procurement decisions could significantly influence the viability of local production.

Building Forward

For Sassda, the broader significance of localisation extends well beyond import replacement alone.

The organisation sees localisation as an opportunity to rebuild manufacturing confidence, stimulate industrial investment and strengthen South Africa's role within global manufacturing supply chains.

In many respects, the current moment represents an important strategic crossroads for the stainless steel industry.

Global supply chains are being reassessed. International manufacturers are seeking more agile regional production partners. Industrial resilience is becoming increasingly important. At the same time, South Africa retains many of the technical capabilities, manufacturing skills and industrial infrastructure required to participate meaningfully in these shifts.

The challenge now lies in translating that potential into sustained industrial growth.

If successful, localisation within the stainless steel sector could ultimately help drive increased local stainless steel consumption, stronger manufacturing capability, export growth and large-scale employment creation while reinforcing South Africa's reputation for technical manufacturing excellence.



Engineering Perspective Meets Industry Agility

As Operations Director at NDE **Andrew Campbell** brings an unusual blend of engineering training, entrepreneurial thinking and real-world project experience to the stainless steel sector. Having started his career in renewable energy, project finance and infrastructure development, he entered the metals industry during one of its most turbulent periods, navigating market volatility, Covid-19 disruption and rapidly shifting global demand conditions. Today, Campbell plays a central role in helping NDE support customers across the stainless steel value chain, while offering thoughtful insight into material innovation, industry collaboration and the long-term future of South African manufacturing...

Please share a bit about your background, including where you grew up, your schooling and tertiary education and how you first entered the stainless steel industry.

I went to school in Johannesburg and then attended university in Cape Town, where I studied Mechanical Engineering. During my third year at UCT, I realised I might need to pivot towards something more orientated toward the business and project management side of engineering. Once I completed my undergraduate engineering degree, I therefore pursued a postgraduate degree in Entrepreneurship.

I started as an intern at a venture capital fund, which placed me within its online pharmacy startup. I then spent five years in the solar industry working in project finance, mergers and acquisitions, and contract management before eventually joining NDE. It has certainly been an unusual path!



Looking back on your career so far, what are some of the key projects, roles or experiences that challenged you the most, while also helping to shape your technical skills, leadership approach and career growth?

During my time at Sonnedix, the solar IPP, we had to submit incredibly complicated bids to the Department of Energy as part of the REIPPPP programme. During these periods, we often had extremely intense weeks of negotiations with banks, developers, EPCs and other stakeholders. Sixteen-hour days leading up to bid submissions or financial close were common.

I was also involved in mergers and acquisitions deals, which were always challenging because of the need to balance expectations across all parties to get transactions

over the line. In addition, I worked alongside our EPC contractor during the construction of a solar power plant in the Northern Cape. It was a massive infrastructure project with tight timelines and required extensive co-ordination and teamwork across stakeholders.

Then I entered the stainless steel industry. I started at NDE in 2019, which was already a difficult year for the industry, before we moved straight into Covid-19 lockdowns, followed by a frenetic period driven by commodity prices and post-pandemic demand. The metals industry is a wild place. I often ask colleagues if this is the worst it has ever been, and they usually just smile and show me their battle scars. We are part of an incredibly resilient industry.

All of these experiences contributed to developing my skills. At the time, it is not always enjoyable, but looking back I am grateful to have experienced them. Especially when you are starting out and still have the energy and flexibility to pull all-nighters and travel extensively to get things done.

These environments also teach you the value of teamwork, diverse skill sets and camaraderie during difficult periods. I would particularly highlight the opportunity I have had to work with experienced and exceptionally talented people across different industries. That has fundamentally shaped, and continues to shape, my career.

“The metals industry is a wild place. I often ask colleagues if this is the worst it has ever been, and they usually just smile and show me their battle scars.”

What would you say are the biggest lessons you've learnt so far, both professionally and personally?

Professionally, I would highlight the following:

- The power and importance of relationships continue to grow.
- Sometimes tasks can feel overwhelming, but breaking them down into smaller steps helps.
- Lean into your team and genuinely listen to what people have to say. Surround yourself with good people and you will get good ideas and valuable input.
- Some decisions need to be made quickly, but most important decisions do not.
- You will never have complete certainty, so do not wait for it.
- An honest and clear narrative around what and why you are doing something is incredibly important because it helps bring people along with you.

Personally:

- I have come to deeply appreciate the value of role models and experienced people who are generous with their time and knowledge.
- Since entering the stainless steel industry, I have realised how much I admire the work our industry does. As a semi-successful, or perhaps failed, engineer depending on your perspective, I remain constantly impressed by what our customers and the industry achieve.
- Often, when you are honest and approachable as a person or company, the industry responds in the same way.
- Although stressful periods are never enjoyable at the time, they often teach you a great deal about yourself and your resilience.
- Keep your sense of humour. In serious situations, where everyone already understands the gravity of the moment, there is often no need to add further tension.

What is your current role at NDE and what does a typical day look like for you?

I am the Operations Director for NDE. It is a highly varied role that moves across most aspects of the business. Essentially, I try to determine how we can assist our branches in solving pressing issues while also finding ways to empower them to service customers more effectively.

This ranges from sales and procurement to warehousing, administration and finance. The best way I can describe it is acting as the grease between the gears. Personally, my biggest passion within all of this is the reporting and data side of the business.

Given NDE's role in supplying stainless steel, aluminium and corrosion-resistant solutions, how do you see the company helping customers make the right material choices, improve quality and support more efficient project delivery across the local stainless steel value chain?

If I am completely honest, I do not think distributors necessarily have significant sway in material selection. Of course, we are always happy to assist where needed and our company has extensive knowledge and experience to offer. However, I believe the industry, and most engineers, already understand the role these materials can play. They may not know every specific grade, but they certainly understand the broader advantages and lifecycle considerations.

A topical example would be SpaceX and Starship, where the outer shell now comprises 300-series stainless steel. The material was always recognised as a viable material for spacecraft, yet Starship was the first major example of its use in this way. When you hear the design story behind it, much of it comes down to engineers being given the

freedom to try something new, combined with a decision-maker willing to shoulder the risk of moving away from tradition.

In our local market, engineers and fabricators should ideally have more flexibility to change material designs in pursuit of longer design lives and improved performance. Unfortunately, many material decisions are still driven primarily by immediate cost, material accessibility and speed. In an uncertain world, it can be difficult to motivate for longer lifecycle considerations.

For NDE and the broader distributor network, material availability and pricing remain important factors. When projects move into more specialised material choices, stock is often not readily available locally. However, customers and end-users are not always aware of how quickly we can source specialised grades internationally, and increasingly through dynamic local suppliers as well.

“In our local market, engineers and fabricators should ideally have more flexibility to change material designs in pursuit of longer design lives and improved performance.”

From your experience, how important are skills development and technical expertise to the successful application of stainless steel in key industrial projects? Are there any specific skills gaps or growth opportunities you believe the industry should be focusing on?

Again, I do not necessarily believe this is purely a skills issue. In many cases, it is more of a structural challenge within the industry and the way turnkey projects are broken up and contracted out.

There are often too many layers between contract initiators, design houses, fabricators and the distribution network that ultimately has to source and stock material. Material specification changes frequently require buy-in across this entire chain.

For example, a particular steel grade may initially be specified for a chemical pipeline. Someone within the chain may realise that switching to stainless steel could significantly improve the operating lifecycle, but the material cost would be higher. That contractor may suggest the change to the engineering house, which then has to motivate it to the client. This can lead to a larger capital outlay requiring approval from investment committees and other decision-making structures. In many instances, maintenance contracts and teams are also separate from capital equipment teams, which adds another layer of complexity.

As a result, it becomes difficult to get all stakeholders aligned on the value of a specification change, and the original design material is often retained.

The solution lies in creating better forums and neutral spaces where successful material choices and case studies can be openly discussed and understood, despite commercial sensitivities.

Interestingly, some of the most exciting innovations often come from smaller fabricators and manufacturers whose focus is on delivering a working solution or product rather than executing against a predefined design. They sometimes have the flexibility to make bold decisions around switching to specialised stainless steel or aluminium grades that ultimately improve product performance.

Taking a broader view, what do you see as the biggest challenges currently facing the South African stainless steel industry, and what practical or innovative solutions could help address them?

Beyond the obvious demand challenges facing the industry, driven by both policy and global shocks, I believe one of the biggest issues is the training and development of artisans.

I would not place blame on any single area. It has simply become increasingly difficult for specialised centres, private companies and public institutions to sustain these programmes independently.

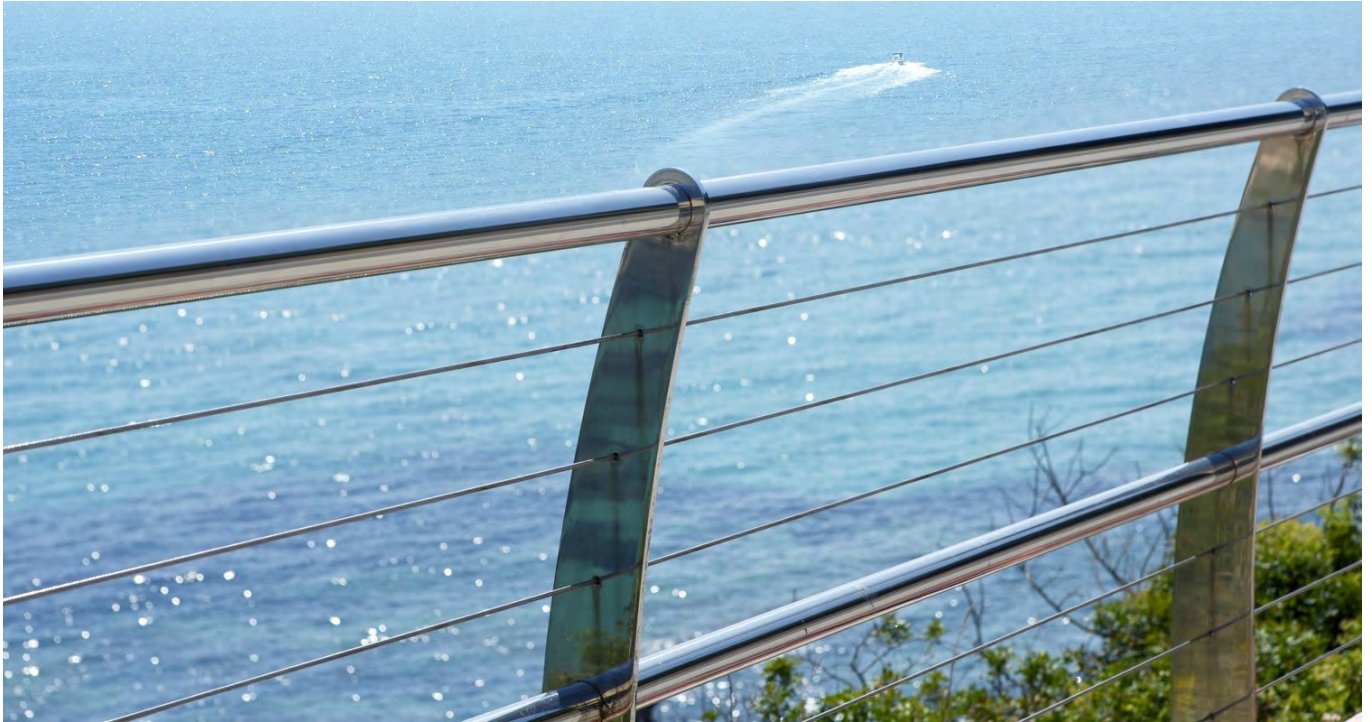
In my view, this presents a major opportunity for organisations such as Sassda to step in. There is potential to build a funding pool that could support artisan training schools for boilermakers, fitters, turners and related trades. This would not only benefit South Africa’s manufacturing sector but could also support contributing members through structured training initiatives if implemented correctly.

Which developments or innovations in stainless steel are you most excited about at the moment, and which industries or sectors do you believe hold the greatest future potential for stainless steel applications?

I find the work our customers do incredibly interesting and exciting. I am constantly impressed by what the industry is capable of producing.

In terms of future sectors, I believe developments in pharmaceuticals, particularly those being accelerated through AI-assisted breakthroughs, will have significant downstream impacts on manufacturing capacity requirements. We are already seeing some of this within the GLP-1 inhibitor market.

I am also hopeful that South Africa’s mining industry could benefit from a long-term revival linked to copper and platinum group metals demand associated with computing and electric vehicle markets.



Passive Layer, Active Risk: Why Coastal Stainless Steel Failures Start in the Workshop

South Africa's coastline remains one of the harshest environments in the world for stainless steel applications, yet industry experts argue that most failures blamed on material selection are, in fact, rooted in poor fabrication practices. Sassda has just launched a new technical guide on stainless steel passivity in South African coastal environments which urges engineers, fabricators and specifiers to rethink the way corrosion risk is assessed and managed.

At the centre of the discussion is the passive layer, the ultra-thin chromium-rich oxide film that gives stainless steel its corrosion resistance. While the alloy itself may contain as much as 70% to 80% iron, it is this microscopic passive layer that prevents corrosion by blocking metal dissolution and continuously reforming in the presence of oxygen.

However, in coastal South African conditions, maintaining that passive layer is far more difficult than many project teams appreciate.

The combination of high chloride exposure, strong prevailing winds, warm temperatures and daily wet-dry cycles creates an aggressive environment where even small fabrication defects can rapidly develop into visible corrosion. According to the guide, these conditions expose "fabrication sins" within months rather than years.

This has significant implications for commonly specified grades such as 304 and 316 stainless steel. Grade 304, which lacks molybdenum, has limited resistance to chloride attack and is generally regarded as unsuitable for coastal applications close to the sea.

Grade 316 performs considerably better due to the presence of molybdenum, which improves pitting resistance and supports re-passivation of damaged areas. Yet the guide stresses that 316's coastal performance is highly dependent on fabrication quality. Correctly fabricated components can provide excellent service life, while poorly fabricated systems may fail rapidly and visibly.

Duplex stainless steels offer the highest level of corrosion resistance owing to their elevated chromium, molybdenum and nitrogen content. Nitrogen, in particular, significantly improves re-passivation kinetics and localised

corrosion resistance. Nevertheless, the report cautions that even duplex grades are not immune to poor workmanship.

“Most stainless steel corrosion seen along the South African coast is not a failure of metallurgy, but rather a failure of fabrication discipline.”

Fabrication flaws

The guide identifies fabrication-induced corrosion as the dominant cause of premature stainless steel failures along the South African coast. Among the most common problems are heat tint left after welding, inadequate pickling and passivation, carbon steel contamination, rough grinding and the creation of crevices during fabrication or installation. Heat tint, for example, creates chromium-depleted zones with weakened corrosion resistance. If not properly removed, these areas can become initiation points for pitting and crevice corrosion. Likewise, carbon steel contamination from shared workshop tools or grinding dust can establish local corrosion cells that attack the stainless steel surface.



The report argues that many corrosion failures incorrectly attributed to material grade selection are actually workmanship-related. A key diagnostic indicator is corrosion patterning. Corrosion concentrated around welds, fasteners or isolated surface areas generally points to fabrication or contamination issues rather than alloy inadequacy. Uniform pitting across all surfaces is more indicative of a genuine material-environment mismatch.

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To address these risks, the guide proposes a strict fabrication checklist for coastal applications. Recommended controls include dedicated stainless steel-only tooling, controlled welding procedures, complete heat tint removal, mandatory pickling and passivation, smooth low-roughness surface finishes and rigorous final cleaning before handover.

“In South African coastal environments, stainless steel succeeds or fails at the passive layer.”

Common problems

The guide also highlights recurring problems in common coastal applications.

Architectural balustrades often experience rust bleeding from welds and tea staining on horizontal rails due to inadequate weld finishing and poor drainage design. Tanks frequently suffer pitting along weld seams or shell-to-floor junctions where poor surface preparation and insufficient cleaning allow chlorides to concentrate. Fasteners are especially vulnerable when incorrect materials or contaminated components are used, while

pipng systems commonly fail at heat-affected weld zones or dead-leg sections where oxygen depletion occurs.

Material selection remains important, but the report stresses that fabrication quality ultimately determines performance. For applications within 500 m of the coast, duplex stainless steels are strongly preferred, while 316 may still be acceptable under carefully controlled fabrication conditions. Grade 304 is generally considered unsuitable in these zones.

Further inland, exposure severity decreases, allowing broader use of 316 and, in some cases, 304. However, the report warns that poor fabrication practices can undermine the performance of any alloy grade regardless of theoretical corrosion resistance.

The publication concludes that the stainless steel industry must shift its focus away from simply upgrading alloys whenever corrosion appears. While specifying more noble and expensive materials may sometimes mask underlying problems, it does not necessarily solve them.

Instead, the report argues that South Africa's coastal corrosion challenge should be approached through disciplined fabrication, proper surface treatment and a deeper understanding of passive layer behaviour.

In practical terms, the message to the industry is clear: stainless steel success on the South African coast depends less on what alloy is selected and more on how that alloy is handled before it reaches service.



Stainless Steel: Supporting SA Mining Where Performance Matters Most



From deep-level gold shafts to mineral processing plants handling aggressive slurries and acidic water, stainless steel has become a critical material in South Africa's mining industry. While carbon steel continues to dominate large structural applications, stainless steel is increasingly being specified where corrosion resistance, durability, safety, and lifecycle performance matter most. As mining companies face rising maintenance costs, environmental pressures, and the need for operational reliability, stainless steel is proving its value across the mining value chain...

South Africa's mining sector remains one of the country's most important economic drivers, operating in some of the harshest industrial conditions in the world. From deep-level gold and platinum mines to large-scale chrome, manganese, and iron ore operations, the industry demands materials capable of withstanding corrosion, abrasion, moisture, chemicals, and continuous heavy-duty operation.

Within this environment, stainless steel has become an essential enabling material. Its role is not to replace carbon

steel entirely, but rather to provide targeted performance advantages in applications where failure, downtime, or contamination carry significant operational and financial consequences.

Mining conditions in South Africa are particularly demanding. Acid mine drainage, chloride-rich water, chemically aggressive slurries, and high underground humidity all contribute to accelerated material degradation. At the same time, many operations are

located in remote areas where maintenance shutdowns can be extremely costly.

Under these conditions, stainless steel offers several important advantages, including corrosion resistance, improved abrasion performance, lower maintenance requirements, and extended service life. Although the initial material cost may be higher than conventional carbon steel, the long-term lifecycle savings often justify the investment.

“In mining, stainless steel is not a luxury material. It is a strategic investment in uptime, safety, and long-term operational performance.”

Corrosive capability

One of the largest areas of stainless steel use in mining is within mineral processing plants. These facilities operate continuously and handle highly abrasive and corrosive slurries that rapidly damage conventional materials.

Stainless steel is commonly used in slurry pipelines, pumps, impellers, flotation cells, screens, cyclones, filters, and reagent tanks. In these applications, material reliability directly affects production continuity and maintenance schedules.

Several stainless steel grades are widely used in South African mining applications. Austenitic grades such as 304 and 304L are typically specified for general corrosion resistance, while 316 and 316L offer improved resistance in chloride-rich and acidic environments. Duplex stainless steels such as 2205 provide higher strength and enhanced corrosion resistance for more aggressive duties.

South Africa has also played an important role in the development and adoption of utility ferritic stainless steels, particularly 3CR12. Originally developed locally for demanding industrial environments, 3CR12 has become widely used in mining applications where moderate corrosion resistance and cost efficiency are required. Underground mining infrastructure represents another significant area of stainless steel use. In deep-level operations, where safety and reliability are critical, stainless steel is frequently specified for service water piping, compressed air systems, cooling infrastructure, dewatering systems, handrails, gratings, cable trays, and ventilation components.

Corrosion-related failures underground can create serious operational and safety risks. Stainless steel helps reduce these risks while also lowering maintenance demands over the life of the mine.

A variety of applications

Water management remains a particularly important challenge for South African mines. Dewatering

systems often operate continuously in acidic and abrasive environments, placing severe strain on pumps, valves, and pipelines. Stainless steel, especially 316 and duplex grades, is increasingly used in pump internals, valve bodies, and dewatering pipelines to improve operational reliability and reduce downtime.

In materials handling applications, stainless steel is used more selectively. While carbon steel continues to dominate major structures, grades such as 3CR12 are commonly used in ore chutes, transfer points, hopper liners, and screens where abrasion and corrosion occur simultaneously. Certain stainless steels also exhibit work-hardening properties under impact, improving wear performance over time.

Environmental compliance is another growing driver of stainless steel use. Tailings systems, water treatment plants, acid neutralisation infrastructure, and remediation projects all require long-term resistance to corrosion and leakage risks. Stainless steel's durability makes it well suited for these applications, particularly where infrastructure is expected to operate reliably for decades.

As mining companies increasingly evaluate materials on total lifecycle cost rather than upfront purchase price alone, stainless steel continues to strengthen its position within the sector. Beyond operational performance, the material also supports local fabrication capability, maintenance industries, and South Africa's broader stainless steel value chain.

For the mining industry, stainless steel is no longer viewed simply as a premium material choice. In many critical applications, it has become an operational necessity.





From Mine Site to Export Market: How Stainless Steel is Supporting South African Mining and Industrial Growth

South Africa's mining sector remains one of the country's most strategically important industries, with operations spanning platinum group metals (PGMs), gold, chrome, manganese, coal, iron ore, and uranium. While mining continues to underpin large portions of the national economy, its influence extends far beyond raw mineral extraction.

Increasingly, the operational demands of modern mining are driving the growth of local stainless steel fabrication, engineering capability, and export potential. From slurry pipelines and flotation cells to modular process plants, underground infrastructure, and specialist wear-resistant components, stainless steel is playing an increasingly important role in supporting safer, more reliable, and more efficient mining operations.

At the same time, South African fabricators and engineering companies are leveraging decades of mining expertise to develop products and capabilities that are finding relevance both locally and internationally.

Although carbon steel still dominates many structural applications across mining, stainless steel has established itself as a key material wherever corrosion resistance, wear

performance, hygiene, safety, and long-term reliability are critical.

Its use within mining is highly application specific. Stainless steel is not selected simply because it is corrosion resistant, but because it provides measurable operational value in environments where equipment failure or excessive maintenance directly impacts production continuity and operating cost.

PGMs Driving Demand and Local Capability

Platinum Group Metals (PGM) mining remains the single largest user of stainless steel in South Africa and is widely regarded as the strongest platform for stainless steel localisation and export development.

Concentrated mainly within the Bushveld Mineral Complex across Limpopo, Rustenburg, and North West Province, these operations process highly abrasive and chemically aggressive slurries under continuous operating conditions.

Typical stainless steel applications include:

- Flotation cells and thickeners
- Slurry pipelines and launders
- Pump casings, impellers, and shafts
- Acid and reagent tanks
- Tailings and return-water systems

The severe combination of abrasion, chlorides, acidic conditions, and moisture creates an environment where conventional materials deteriorate rapidly. Downtime in concentrator plants is extremely costly, making reliability a major operational priority.

Since concentrator plants are highly site-specific, many components must also be custom designed and fabricated locally. This creates significant opportunities for South African engineering and manufacturing companies.

Areas where local capability already exists include:

- Pipe spooling and modular skid fabrication
- Heavy-duty process equipment manufacturing
- Stainless steel plate work and tank fabrication
- On-site installation and maintenance services

Many industry participants view PGMs as the anchor commodity capable of supporting a broader export-oriented stainless steel fabrication industry.

Common stainless steel grades used in PGM operations include:

- 304 / 304L for general plant equipment
- 316 / 316L for improved chloride and acid resistance
- 3CR12 for cost-effective corrosion resistance
- Duplex 2205 for high-pressure pipelines and aggressive duties

Export potential is also increasing as neighbouring mining economies such as Zimbabwe, Botswana, Namibia, Zambia, and the Democratic Republic of Congo continue expanding mineral processing capacity.

Gold Mining Supporting Specialist Expertise

South Africa's deep-level gold mining sector presents a different set of challenges due to its extensive underground infrastructure, heat, humidity, acidic mine water, and chemically aggressive processing conditions.

Stainless steel plays an important role in supporting both safety and long-term infrastructure integrity underground.

Typical applications include:

- Dewatering systems and pump stations
- Underground service-water and cooling pipelines
- Cyanide leach tanks and piping
- Carbon-in-leach (CIL) and carbon-in-pulp (CIP) circuits
- Underground walkways, ladders, and handrails

These demanding operating conditions have also allowed South African manufacturers to develop specialised expertise in:

- Underground piping systems
- Modular pump stations
- Safety-critical fabricated components
- Refurbishment programmes for ageing mines

Export opportunities exist for complete underground infrastructure packages, dewatering systems, and specialist stainless fabrications. Markets such as Ghana, Mali, and Tanzania are increasingly relevant because of expanding underground gold mining operations.

South Africa's decades of deep-level mining experience remain a major differentiator in international markets.

Typical grades specified in gold mining include:

- 304 / 304L for structural and general services
- 316 / 316L in acidic and cyanide environments
- 3CR12 for underground infrastructure and piping

For deep-level operations, long service life and reduced maintenance are critical operational advantages.

Chrome Mining Balancing Abrasion and Corrosion

Chrome mining shares many similarities with PGM processing due to the abrasive nature of chrome slurries and wet processing systems.

Reliability remains essential because most chrome concentrators operate continuously with limited tolerance for shutdowns.

Stainless steel applications include:

- Concentrator plants
- Slurry pipelines
- Spiral concentrators and launders
- Pump components
- Tailings infrastructure

The combination of abrasion and corrosion creates severe wear conditions, particularly in wet handling areas. Chrome mining also creates opportunities for larger-scale repetitive fabrication work, allowing local manufacturers to benefit from economies of scale.

Typical fabrication opportunities include:

- Pipe fittings and slurry systems
- Modular plant components
- Wear-resistant replacement components

Potential export markets include Zimbabwe, India, Turkey, and Kazakhstan, where chrome processing infrastructure continues to expand.

Frequently used stainless steel grades include:

- 3CR12 for abrasion resistance and cost efficiency
- 304 and 316 in more corrosive areas
- Duplex stainless steels for high-pressure duties

Manganese Mining Creating Niche Opportunities

Manganese mining operations in the Northern Cape expose materials to exceptionally abrasive conditions where impact wear and wet processing environments combine to accelerate material failure.

Key stainless steel applications include:

- Ore chutes and transfer points
- Screens and feeders
- Wet processing systems
- Slurry-exposed plant components



One advantage of certain stainless steels is their ability to work-harden under impact, improving wear resistance over time.

These operations also create specialised fabrication opportunities for products such as:

- Chutes and hopper liners
- Transfer systems
- Wet screens and feeders
- Retrofit wear components

Although export volumes may be smaller, niche opportunities exist in countries such as Gabon, Brazil, and Australia where similar mining conditions are encountered.

Commonly specified grades include:

- 3CR12 in abrasive general service areas
- 304 and 316 in corrosive processing zones

The primary objective is extending wear life in applications where carbon steel would deteriorate rapidly.

Coal Mining Supporting Processing Infrastructure

Although stainless steel use in coal mining is comparatively lower than in PGMs or gold, it still plays an important role in maintaining operational reliability within processing plants.

Typical applications include:

- Dense medium separation (DMS) plants
- Slurry pipelines and pumps
- Screens and centrifuges
- Water treatment systems

Coal washing circuits operate under abrasive wet conditions where corrosion resistance directly improves equipment life and plant uptime.

Coal mining also supports larger-scale repetitive fabrication opportunities, particularly in:

- DMS plant modules
- Slurry handling systems
- Modular process components
- Water treatment infrastructure

In these sectors, South Africa's advantage lies not necessarily in exporting mining hardware itself, but in exporting processing technology and modular plant solutions.

Common grades include:

- 304 and 316 in acidic environments
- 3CR12 in abrasive service conditions



Iron Ore and Uranium Requiring Strategic Material Selection

Iron ore mining presents a less chemically aggressive environment, meaning stainless steel use is more targeted rather than widespread. Carbon steel still dominates large structural applications.

Stainless steel is typically used in:

- Wet transfer points
- Chutes and hoppers
- Feeders and screens
- Water-handling systems

These are areas where moisture and abrasion combine to accelerate corrosion and wear.

Iron ore mining also supports hybrid fabrication skills involving stainless and carbon steel combinations, particularly in liners, transfer points, and water-handling systems.

Preferred grades include:

- 3CR12 for durability and cost efficiency
- 304 in selective plant applications

Uranium extraction, often linked to gold mining operations, represents one of the most demanding environments for stainless steel.

Applications include:

- Acid leaching circuits
- Solvent extraction systems
- Process tanks and pipework

Highly acidic and radioactive conditions require materials capable of maintaining long-term integrity and contamination control.

Typical grades include:

- 316L
- Higher-alloy austenitic stainless steels
- Duplex stainless steels

South Africa's Competitive Advantage

South Africa's stainless steel industry has developed several competitive advantages through decades of mining involvement.

Key strengths include:

- Expertise in utility ferritic grades such as 3CR12
- Advanced duplex stainless steel fabrication capability
- Strong modularisation and skid fabrication experience
- Proven installation and maintenance expertise

Mines increasingly favour pre-fabricated modular systems that can be transported and installed quickly. This trend creates strong export potential for South African fabricators capable of delivering engineered "bolt-on" solutions into African and international mining markets.

Beyond manufacturing itself, long-term service contracts linked to installation, commissioning, maintenance, and replacement programmes may become equally valuable export opportunities.

Lifecycle Performance Driving Material Decisions

Across all mining sectors, one trend is becoming increasingly clear: mining companies are evaluating materials based on total lifecycle performance rather than upfront purchase price alone.

Key reasons stainless steel continues to grow in mining include:

- Reduced maintenance requirements
- Improved corrosion resistance
- Longer service life
- Improved operational safety
- Lower downtime costs
- Better reliability in remote operations

As operational pressures continue to increase, stainless steel is expected to play an even larger role in supporting safer, more reliable, and more sustainable mining operations.

At the same time, South Africa's stainless steel fabrication sector is well positioned to leverage its mining experience into broader regional and international engineering markets.

Mining Stainless Steel Demand



As South Africa's mining sector increasingly adopts stainless steel solutions to address corrosion, abrasion, safety, and lifecycle performance challenges, a broader economic opportunity is emerging alongside material demand. Beyond the stainless steel itself, mining applications are creating employment opportunities across fabrication, installation, maintenance, engineering, and specialist technical services. Industry stakeholders believe the real long-term value lies not only in materials supply, but in developing a skilled local manufacturing and engineering ecosystem capable of supporting both domestic mining projects and export markets.

South Africa's mining industry has long been recognised as one of the country's largest industrial employers. Increasingly, however, the growing use of stainless steel within mining applications is creating opportunities far beyond raw material production itself.

The greatest employment impact linked to stainless steel demand does not occur at primary steelmaking level.

Instead, jobs are created throughout the downstream value chain in fabrication, welding, modular assembly, installation, inspection, maintenance, and specialist engineering services.

As mining companies continue to invest in corrosion-resistant and long-life infrastructure, demand for stainless steel fabrication is expanding alongside the need for skilled technical labour.

Process Plants Deliver the Highest Job Multiplier

Mining process plants within the platinum group metals (PGMs), gold, chrome, and coal sectors currently represent the strongest source of stainless steel-related employment opportunities.

Typical stainless steel applications include:

- Tanks and thickeners
- Flotation cells
- Slurry pipelines and fittings
- Pump skids and modular systems
- Tailings and water-treatment infrastructure

These projects require a wide range of skilled and semi-skilled labour, creating strong localisation potential for South African industry.

Key employment categories include:

- Welders and boilermakers
- Pipe welders and pipe fitters
- Welding inspectors and NDT technicians
- Mechanical and metallurgical engineers
- Production planners and QA personnel
- Installation crews and site supervisors

Since many mining systems are customised for specific operations, local fabrication capability becomes highly valuable.

Modular Fabrication Supporting Stable Industrial Employment

Another important growth area is the fabrication of pumps, pipelines, and modular stainless steel skids. Mining companies increasingly prefer pre-fabricated systems that can be assembled off-site and installed rapidly at remote operations. This shift toward modularisation is creating repeatable, scalable manufacturing work within factory environments.

Products driving demand include:

- Duplex and 316 stainless steel piping
- Pump casings and impellers
- Modular pump stations
- Process skids and pipe spooling systems

Skills increasingly required:

- Precision welders
- CNC machinists and operators
- Pipe spooling technicians
- Modular assembly teams
- Commissioning specialists

Unlike some mining-related work that fluctuates according to commodity cycles, modular fabrication offers the potential for more stable industrial employment while also supporting export-oriented production.

Underground Infrastructure Creates Long-Term Demand

In deep-level gold and PGM mining operations, stainless steel demand is also linked closely to safety-critical underground infrastructure.

Common applications include:

- Handrails and walkways
- Ladders and access systems
- Cooling-water and service-water piping
- Dewatering infrastructure

STAINLESS STEEL MINING DEMAND: DIRECT JOB CREATION PER R1 BILLION BY PROVINCE



Province	Jobs	%	Drivers
Gauteng	96	32%	Fabrication, engineering
North West	66	22%	Installation, maintenance
Limpopo	54	18%	Installation, maintenance
Mpumalanga	30	10%	Fabrication, installation
KwaZulu-Natal	18	6%	Fabrication, export
Western Cape	15	5%	Fabrication, engineering
Total	300	100%	

These systems require ongoing installation, maintenance, refurbishment, and replacement work over the lifespan of a mine.

Typical employment opportunities include:

- Underground fitters and artisans
- Installation crews
- Maintenance technicians
- Shaft infrastructure specialists

Because underground mining infrastructure must comply with stringent safety standards, stainless steel solutions often support long-term maintenance-driven employment rather than short-term project work alone.

Specialist Skills Needed for Wear-Corrosion Applications

Mining sectors such as manganese, chrome, and iron ore create demand for specialist stainless steel fabrication in highly abrasive environments.

Typical applications:

- Chutes and liners
- Screens and transfer systems
- Wet-area processing components
- Retrofit wear solutions

Although these sectors may not generate the same employment volumes as process plants, they require highly specialised technical skills.

Niche skills include:

- Specialist welders
- Hard-facing technicians
- Retrofit teams
- Maintenance planners

These applications reinforce the importance of developing advanced stainless steel fabrication expertise within the local market.

Mining sectors such as manganese, chrome, and iron ore create demand for specialist stainless steel fabrication in highly abrasive environments

Skills Development Remains Critical

Industry stakeholders continue to highlight the importance of retaining and developing stainless steel-related skills within South Africa.

Entry-level and artisan pathways include:

- TVET training and apprenticeships
- Stainless steel welding certification
- Pipe fitting and modular assembly training
- Site installation experience

At mid-level technical level, shortages remain a concern in areas such as:

- Welding inspection
- Non-destructive testing (NDT)
- QA/QC management
- Production planning

Higher-level technical skills are equally important in supporting export competitiveness and engineering leadership.

Strategic high-level skills include:

- Welding engineers
- Metallurgists
- Design engineers
- EPC project managers

These roles are particularly important in duplex stainless steel applications, modular plant design, and lifecycle cost optimisation.

Addressing Strategic Skills Gaps

Several strategic challenges remain within the industry. One of the most significant is the shortage of certified stainless steel and duplex welders. Industry observers frequently reference failures experienced in large infrastructure projects such as Medupi as examples of the high cost associated with inadequate welding capability.

There is also growing recognition that South Africa requires stronger design-for-manufacture (DFMA) skills to support modular plant fabrication and export packaging systems. In addition, lifecycle costing expertise is becoming increasingly important as engineers and procurement teams evaluate stainless steel solutions against conventional carbon steel alternatives.

Beyond Materials: Building an Industrial Ecosystem

Industry participants increasingly argue that stainless steel demand in mining should not be viewed purely as a materials issue.

Instead, it represents an opportunity to expand fabrication capacity, create skilled employment, strengthen industrial capability, and develop export-ready engineering services.

As mining companies continue to prioritise reliability, corrosion resistance, and lifecycle performance, stainless steel applications may become an increasingly important driver of South Africa's broader industrial and skills development strategy.



Congo: Opportunity, Infrastructure and the Next Frontier for Stainless Steel Growth

As Africa's infrastructure and industrial development agenda continues to accelerate, the Democratic Republic of the Congo (DRC) is increasingly positioning itself as one of the continent's most strategically important growth markets.

Rich in natural resources, geographically significant and home to a rapidly expanding population of more than 124 million people, the DRC represents both immense opportunity and considerable complexity for manufacturers, infrastructure developers and industrial suppliers operating across Africa.

For South Africa's stainless steel industry, the country's growing pipeline of energy, infrastructure, transport, fuel logistics and urban development projects presents significant long-term potential across multiple stainless steel-intensive sectors.

While challenges around political stability, logistics, funding and infrastructure remain ongoing realities, major investment initiatives currently under way suggest the DRC could become one of Africa's most important future industrial and infrastructure growth stories.

Power Ambitions

One of the most closely watched developments is the renewed momentum around the long-delayed Inga 3 hydropower project, a development with potentially transformative implications not only for the DRC, but for regional energy security across Southern Africa.

Valued at more than \$10-billion, the project has re-emerged as South Africa and the DRC resume discussions around future electricity supply agreements.

The first phase of the project is expected to generate approximately 11 000 MW of electricity, with South Africa reportedly seeking to increase its future import allocation from 2 500 MW to 5 000 MW.

Key project highlights include:

- Initial generation capacity of approximately 11 000 MW
- Proposed increase in South Africa's power allocation to 5 000 MW
- More than \$1-billion in World Bank support already committed
- Significant future demand for industrial, energy and water infrastructure
- Potential downstream opportunities across piping, fabrication and processing systems

Large hydroelectric developments also require extensive long-life infrastructure capable of operating within demanding environmental conditions where stainless steel often provides significant lifecycle advantages through

durability, corrosion resistance and reduced maintenance requirements.

Urban Transformation

Alongside major energy projects, the DRC is also pursuing large-scale urban infrastructure and municipal development initiatives.

In April 2026, the World Bank approved \$250-million in financing for the Kinshasa Urban Transformation and Jobs Programme, known as Kin la Belle.

The initiative aims to improve solid waste management services while simultaneously creating inclusive employment opportunities within Kinshasa, one of Africa's fastest-growing urban centres.

The project reflects the growing recognition that rapidly urbanising African cities require substantial investment in sanitation, waste management, drainage and municipal infrastructure systems.

According to the World Bank, the programme is expected to contribute towards cleaner urban environments, flood mitigation and long-term employment creation.

For stainless steel suppliers and fabricators, urban infrastructure upgrades often create demand for products and systems linked to waste handling, water management, transport infrastructure, processing equipment and public infrastructure projects where durability and corrosion resistance are increasingly important considerations.

As African cities continue expanding, demand for longer-life, lower-maintenance materials is expected to become increasingly important in reducing lifecycle infrastructure costs.

Fuel Infrastructure

The DRC is simultaneously investing heavily into fuel logistics and energy distribution infrastructure as government seeks to improve supply reliability across several underserved provinces.

According to plans announced by the country's hydrocarbons ministry, major priorities include pipeline construction, upgraded storage depots, improved waterways logistics and national road rehabilitation programmes aimed at strengthening fuel distribution networks.

Key focus areas include:

- Expansion of pipeline infrastructure
- Upgrades to fuel storage depots
- Rehabilitation of strategic transport routes
- Improved waterways logistics systems
- Development of a proposed 50 000 t strategic fuel reserve
- Expansion of fuel retail infrastructure into underserved markets

The government is also investigating the establishment of a 50 000 t strategic fuel reserve to improve resilience against global supply disruptions.

These projects have significant implications for stainless steel-intensive sectors linked to fuel storage, tank fabrication, piping systems, logistics infrastructure and specialised industrial applications.

In many fuel handling and storage environments, stainless steel plays a critical role due to its resistance to corrosion, long operational lifespan and suitability for demanding industrial conditions.

The DRC's efforts to improve transport and logistics systems are also expected to support broader industrial development and regional trade connectivity over time.

Regional Potential

Beyond individual projects themselves, the DRC's broader significance lies in its long-term industrial growth potential and regional influence.

The country's population scale, resource base and infrastructure requirements create substantial opportunities across sectors including mining, water infrastructure, energy, transport, manufacturing, food processing and fuel logistics.

For South African stainless steel manufacturers and fabricators, the DRC represents a market where future demand could increasingly emerge for:

- Stainless steel piping systems
- Water and wastewater infrastructure
- Fuel storage and processing equipment
- Industrial fabrication and structural applications
- Food processing and hygienic manufacturing systems
- Mining and materials handling infrastructure
- Architectural and urban infrastructure applications

Importantly, many of these sectors align closely with stainless steel's long-term strengths around durability, recyclability, hygiene performance and lifecycle cost efficiency.

Growth With Complexity

At the same time, operating within the DRC still requires careful navigation of infrastructure constraints, political risk, logistics complexity and funding challenges. Several of the country's largest projects continue to face lengthy implementation timelines, financing requirements and execution risks.

However, despite these realities, momentum around infrastructure investment continues building.

For Africa's stainless steel sector, the DRC increasingly represents more than simply a resource-rich economy. It is emerging as a long-term infrastructure growth market where energy, urbanisation, transport and industrial development are beginning to converge at scale.

As regional integration and infrastructure investment accelerate across Africa, countries such as the DRC could play an increasingly important role in driving future demand for stainless steel-intensive infrastructure, industrial systems and manufacturing solutions.

FoCt Forward: Engineering Growth Through Stainless Steel

As South Africa's stainless steel industry places increasing focus on localisation, sustainability and long-term manufacturing resilience, Cape Town-based Foct Engineering is steadily positioning itself as a growing force within the fabrication and engineering space.

The company has built its reputation through a combination of technical capability, hands-on engineering expertise and a strong commitment to local manufacturing. Operating across fabrication, maintenance, installation and specialised engineering services, Foct Engineering is increasingly aligning its growth strategy with broader industry priorities around skills development, industrial collaboration and sustainable manufacturing practices.

For Managing Director **Shelley Fredericks**, the company's recent membership of Sassda represents another important step in that journey. "We chose to become a member of Sassda to strengthen our role within the stainless steel fabrication value chain and align with the industry's collective drive toward growth. Becoming part of Sassda gives us access to technical expertise, market intelligence, networking opportunities and a platform that reinforces our credibility as bespoke stainless steel fabricators," she explains.

The company's growth ambitions are also being supported through participation in the SAB Foundation Tholoana Programme, which focuses on enterprise development, mentorship and inclusive SME growth.

Precision Growth

Alongside its broader strategic positioning, Foct Engineering continues investing directly into its operational capability and fabrication infrastructure.

The company recently invested in a laser welding system aimed at improving fabrication accuracy, increasing production efficiency and boosting manufacturing capacity. The investment aligns closely with the company's growing focus on precision fabrication and higher-value engineering work.

According to Fredericks, the business has also experienced increasing demand for maintenance-related work, reflecting growing customer confidence in the company's technical expertise and reliability.

"We are seeing increased demand for maintenance work, which reflects trust in Foct Engineering's reliability and positions us as a long-term engineering



partner rather than simply a once-off fabrication supplier," Fredericks says.

The company's broader engineering offering includes fabrication, installation, repairs and ongoing support services designed to assist industrial clients with both new projects and operational continuity.

At the same time, Foct Engineering has invested heavily in strengthening its market presence through branding initiatives and direct marketing efforts aimed at positioning the company more prominently within South Africa's stainless steel fabrication landscape. These initiatives are helping transform the business from a traditional bespoke fabrication operation into a broader provider of localised and innovative engineering solutions.

Local Capability

Like many South African manufacturers, Foct Engineering continues to navigate challenges including cheap imports, supply chain inefficiencies, energy instability and broader infrastructure constraints. However, Fredericks believes these same pressures are simultaneously creating opportunities for stronger localisation and industrial development. “There are definitely challenges within the local manufacturing environment, but there are also major opportunities to rebuild and strengthen South Africa’s industrial capability through localisation, infrastructure development and stronger support for local manufacturers,” she says.

For Foct Engineering, local capability development forms a central part of its long-term strategy.

The company prioritises local sourcing wherever possible while also investing in artisan development, mentorship and youth skills development initiatives.

“Local capability, skills development and supplier collaboration are strategic requirements. These elements directly influence our ability to deliver bespoke and sustainable solutions while remaining resilient in a challenging economic environment,” Fredericks explains. She adds that strong supplier relationships and industry partnerships remain critical to ensuring consistent quality, reliability and competitiveness.

Looking ahead, Fredericks believes planned infrastructure investment across transport, water, energy and construction sectors could create significant opportunities for increased stainless steel demand over the next three to five years.

A Sustainable Future

Alongside localisation and industrial capability, sustainability is becoming an increasingly important focus area for both Foct Engineering and the broader stainless steel industry.

According to Fredericks, global demand is steadily shifting towards stainless steel products produced through lower-carbon, energy-efficient and environmentally responsible manufacturing practices.

“The stainless steel industry is making a significant shift towards sustainability, particularly within manufacturing practices. Global demand is rising for stainless steel that is not only durable, but also produced with lower carbon emissions, recycled inputs and energy-efficient processes,” Fredericks says.

In response, Foct Engineering is aligning itself with suppliers implementing sustainable operational practices while also exploring ways to refurbish and modify existing equipment as part of a broader recycling and cost-reduction strategy for clients.

Fredericks is also currently participating in mentoring and sustainability programmes through Greentalent as the company works towards improving its sustainability performance and operational practices.

For a company built through persistence, technical commitment and entrepreneurial determination, Foct Engineering’s growth story reflects the broader resilience still present within South Africa’s stainless steel sector. It is also a reminder that some of the industry’s most important future growth may well come from ambitious local SMEs prepared to invest, innovate and build for the long term.



For more information visit www.foct.co.za
Follow Foct Engineering on [LinkedIn](#)



Technical consultancy to strengthen industry competitiveness

As South African manufacturers face increasing pressure to compete in a global industrial environment shaped by stricter quality requirements, international certification standards and growing export expectations, Sassda is expanding its role within the local stainless steel sector through the launch of a dedicated technical consultancy service aimed at strengthening manufacturing capability, compliance and export readiness.

The move forms part of Sassda's broader strategic focus on helping members become more competitive both locally and internationally while creating new opportunities for South African stainless steel products in export markets.

While Sassda has long played an important role in technical training, industry advocacy and market

development, the consultancy service represents a more hands-on extension of that support, particularly around quality systems, welding standards, operational improvement and certification readiness.

Beyond Compliance

For Sassda, the reality is clear. The local market alone is not large enough to sustain long-term growth across the stainless steel industry.

Creating sustainable industrial growth increasingly requires local manufacturers to access opportunities beyond South Africa's borders, particularly within Africa and other developing export markets.

That, however, requires manufacturers to meet increasingly stringent international quality, safety and compliance standards.

Sassda's consultancy offering is therefore designed to help members better prepare for these opportunities by identifying operational gaps, strengthening quality systems and assisting companies on the journey towards internationally recognised certification standards.

The service includes GAP analyses aligned to ISO 9000 quality management systems and ISO 3834 welding



certification requirements, allowing companies to better understand where improvements may be required in areas such as procedures, quality control, documentation and technical capability. Importantly, the initiative also draws directly on technical expertise within Sassda itself.

Welding Confidence

A key driver behind the consultancy service is Sassda Market Intelligence Specialist **Tebogo Nkwe**, who is a qualified ISO 9001 auditor and holds Welding Inspection Level I and II qualifications. Through the programme, Nkwe works closely with members to help them strengthen quality systems and improve certification readiness in a practical and cost-effective manner.

“International customers want assurance that products are being manufactured in accordance with globally recognised standards for quality, safety and consistency.

The aim is not simply certification for the sake of compliance, but creating stronger, more competitive manufacturers that are better positioned to access new opportunities,” says Nkwe.

A major focus area within the consultancy service is ISO 3834 certification support, which is becoming increasingly important across industrial manufacturing sectors where welding quality is critical.

Welding is classified as a “special process”, meaning final weld quality cannot always be fully verified through inspection alone. Instead, consistent quality depends on having the correct procedures, qualified personnel and process controls in place throughout manufacturing.

For manufacturers, ISO 3834 certification has become far more than a technical requirement. It increasingly serves as a competitive differentiator that demonstrates reliability, professionalism and operational maturity to customers and project owners.

The standard also assists companies in reducing defects, lowering rework costs and improving overall production consistency. In many sectors, it is already becoming a prerequisite for participation in large-scale industrial and infrastructure projects.

Skills Into Strength

The consultancy initiative is already being implemented within active manufacturing environments.

A current project, which remains confidential at the client’s request, focuses on improving quality control and quality assurance systems within a specialised manufacturing operation, with particular emphasis on welding-related processes.

The project includes the implementation of quality control plans, improvements to welding-related documentation and broader process refinement aimed at improving overall manufacturing quality.

One of the key challenges identified during the project involved skills gaps within operational teams. Additional training interventions were therefore introduced to improve understanding, execution and process consistency on the shop floor.

According to Nkwe, measurable improvements have already been observed in welding quality, compliance procedures, documentation standards and staff capability.

Looking ahead, Nkwe expects demand for technical consulting and certification support to continue growing as local manufacturers increasingly seek access to export opportunities and higher-value industrial markets.

The consultancy service also aligns closely with Sassda’s broader objective of strengthening South Africa’s manufacturing base, increasing local stainless steel consumption and supporting long-term industrial growth and job creation.

By helping members improve standards, systems and operational capability, Sassda believes South African manufacturers can position themselves more competitively within regional and global supply chains while reinforcing the country’s reputation for technical expertise and manufacturing quality.

To find out more about Sassda’s Technical Consulting Service e-mail Tebogo@sassda.co.za



Skills Development Central to Stainless Steel Industry Growth

Education and training remain among the most important strategic tools available to strengthen the long-term competitiveness, quality standards and growth potential of South Africa's stainless steel industry.

As the custodian of stainless steel industry development in Southern Africa, Sassda believes structured training plays a critical role in supporting not only individual companies, but also the broader sustainability and advancement of the local manufacturing sector.

Sassda Training Manager **Mankabe More** says the industry increasingly requires a stronger focus on technical capability, practical skills development and knowledge transfer across the value chain.

"Training is not simply about compliance or education. It is about building a more competitive and sustainable stainless steel industry in South Africa. When companies improve technical capability, reduce errors and strengthen quality standards, the entire value chain benefits," says More.

Building Technical Capability Across the Value Chain

Sassda's current education and training structure has been developed to support multiple levels of industry participation, ranging from entry-level awareness through to advanced technical and metallurgical expertise.

The organisation currently offers programmes including the Introduction to Stainless Steel Course, Fundamentals of Stainless Steel Course, Advanced

Stainless Steel Course, Selling of Stainless Steel Course and a specialised Multi-Module Shopfloor Course.

The introductory online programmes are designed to provide newcomers and non-technical personnel with a foundational understanding of stainless steel, including material grades, applications and handling requirements.

At a more advanced level, the Fundamentals of Stainless Steel Course offers ECSA-accredited training covering corrosion, stainless steel applications, mechanical properties, production methods and handling practices over a structured three-week programme.

Meanwhile, the Advanced Stainless Steel Course focuses on areas such as metallurgy, thermodynamics, corrosion mechanisms, welding microstructures and manufacturing processes for professionals requiring deeper technical knowledge.

According to Sassda, improved technical competence in areas such as fabrication, welding, corrosion resistance and finishing can deliver direct operational and commercial value to member companies. Better understanding of stainless steel grades and applications can help reduce defects, minimise material wastage and improve product quality and customer satisfaction.

The association also believes training contributes directly to improved productivity and manufacturing efficiency by helping companies optimise fabrication processes, improve throughput and reduce downtime.

Importantly, many of Sassda's programmes are aligned with ISO, SANS and export standards, helping position companies for participation in regulated markets including Europe, the Middle East and food-grade manufacturing sectors.

Sassda has also seen growing demand for customised on-site shopfloor training tailored to the operational

requirements of individual companies. These practical sessions allow businesses to focus on their own fabrication environments, handling procedures, traceability systems and workshop challenges while training entire teams simultaneously. The customised approach has become increasingly popular among members seeking more practical, operations-focused skills development directly within their manufacturing facilities.

Supporting Localisation and Long-Term Industry Growth

More says South Africa's future competitiveness will increasingly depend on moving beyond price-driven manufacturing towards higher-value fabrication and engineered solutions.

"South Africa cannot afford to compete only on price. The future lies in higher-value fabrication, engineered solutions and specialised stainless steel applications. Skills development creates the platform for innovation, localisation and stronger export competitiveness," says More.

Sassda believes stronger industry-wide training structures can also support localisation efforts by helping

local fabricators move further up the manufacturing value chain and reduce dependence on imported products.

Beyond technical knowledge, the association sees education and training as an important driver of industry transformation, inclusion and workforce sustainability. Structured programmes can help create opportunities for SMEs, emerging fabricators and younger entrants into the manufacturing sector while supporting broader national skills development objectives.

Particular emphasis has also been placed on practical shopfloor capability. Sassda's Multi-Module Shopfloor Course includes modules covering handling and warehousing best practices, fabrication methods, contamination prevention, traceability and pickling and passivation processes.

According to Sassda, long-term investment in skills development creates a compound industry benefit where improved capability strengthens quality standards, increases competitiveness, supports market growth and ultimately contributes to greater industrial sustainability and job creation within South Africa's stainless steel sector.

ROSHENE SINGH

EMV Africa HR & Quality Manager

Which Sassda courses have you or your staff attended and when?

I personally attended the Advanced Stainless Steel course, while our Sales and Marketing teams completed both the Advanced Stainless Steel and Selling of Stainless Steel courses. Over the past three years, our teams have continuously participated in Sassda training initiatives. One of the standout programmes was the Handling of Stainless Steel course, which was conducted on site for our warehouse teams. The mill visits are also highly anticipated events on our annual calendar.

What value did your staff get out of attending them?

The courses empowered our teams with a stronger foundational understanding of the products we work with every day. As a result, they are able to engage with customers with far greater confidence and credibility.

Would you recommend the courses to others and why?

Definitely. I believe Sassda plays an important role in strengthening the industry through knowledge sharing and skills development. If we want to grow and nurture talent within the sector, we need to invest in people. EMVAfrica is committed to being a learning organisation, and these training opportunities align perfectly with that philosophy.

HEYNS BOTHA

Fastenright Sales Manager

Which Sassda courses have you or your staff attended and when?

Over the past few years, several members of the Fastenright team have attended the Fundamentals of Stainless Steel course, along with a number of the additional training programmes offered by Sassda.

What value did your staff get out of attending them?

The training has delivered excellent value to our team, particularly in improving their understanding of stainless steel grades, applications, corrosion resistance, and broader industry best practices. This has significantly strengthened both their technical confidence and customer engagement, enabling staff to provide clients with more informed advice and service.

Would you recommend the courses to others and why?

Absolutely. We would highly recommend the Sassda courses to others operating within the stainless steel industry. The courses are professionally presented, practical, and beneficial for both new and experienced employees. Ongoing industry education is essential, and Sassda continues to play a valuable role in elevating industry knowledge and standards.

Sassda Western Cape Golf Day Scores a hole in One

The annual Western Cape Golf Day hosted by Sassda in association with SAIW once again delivered a successful day of industry networking, camaraderie and friendly competition at the picturesque Bellville Golf Club.

Following two days of violent storms across Cape Town, the weather turned dramatically, with brilliant sunshine and clear skies creating the perfect setting for the event. The welcome break in the weather added to the upbeat atmosphere, contributing to what many described as a truly outstanding day on and off the course.

A strong turnout of 72 golfers participated in the event, bringing together representatives from across the stainless steel, fabrication and broader manufacturing sectors for a relaxed but engaging day of golf and networking. The atmosphere continued into the evening, with 90 guests attending the dinner function where players, sponsors and industry stakeholders had the opportunity to strengthen relationships and celebrate the spirit of the industry.

The event once again highlighted the value of collaboration and personal engagement within the sector, while reinforcing the strong partnership between Sassda's key role in supporting South Africa's manufacturing and engineering industries.



