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volume 27 number 1
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8 industry news

The art of protectionism

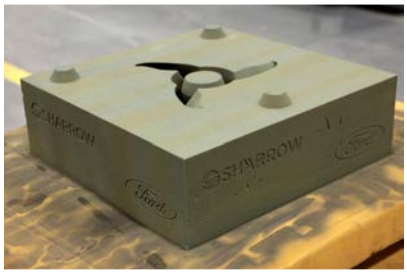
How Kaltharz 8500 redefines binder systems; Upholding the legacy of Cecil Zlotnick at P.H. Heat Treatment; Malleable Castings; ITAC increases tariffs; Cutting tools hit with 20% tariff; Hillside Aluminium; Mozal shutdown; Cape Town's Metal Theft Unit; South Africa's ferrochrome smelters: Fedgroup secures R500 million; Aurelio Grech-Cumbo named Italian Business Person of the Year

32 international news

HA Group strengthens its presence in Asia; Seres and Boao Mei Aluminium; Simpson's vision for the future; Ford and Sharrow Engineering cut propeller production time; GIFA, METEC, THERMPROCESS and NEWCAST 2027; ABP CEO Till Schreiter; Gulf aluminium output collapses by 40%

44 product review

Mitutoyo's compact vision measuring machine is aimed at replacing profile projectors; Metkon's Servocut 402 metallographic automatic abrasive cutting machine



The art of protectionism

Depending on which side of the fence you find yourself, protectionism can be a good or a bad thing.

South Africa's International Trade Administration Commission (ITAC) and government seem to have made their minds up about which side of the fence they sit on.

The paradox of slowing South Africa's deindustrialisation is a tough one to digest. Globalisation has shown us that being too reliant on certain supply chains can have immediate and costly consequences when those supply chains are interrupted.

South Africa's metals and minerals sectors received a measure of support during May and June as government and industry moved to address two of the most pressing challenges facing local manufacturing – rising import competition and escalating energy costs.

At the same time, renewed international interest in the country's mineral resources is creating opportunities for future investment in downstream processing and beneficiation.

The South African government's decision to increase import duties on a range of steel products is aimed at providing relief to domestic steel producers that have struggled against a sustained influx of imported material. The revised tariffs, which apply to products including flat steel, bars, rods, tubes and pipes have followed ITACs recommendations.

The move comes at a time when local steelmakers continue to face weak domestic demand, high operating costs and growing competition from imported steel, particularly from China. Industry figures indicate that imported steel accounts for more than a third of South African consumption, placing pressure on local producers and raising concerns about the long-term sustainability of domestic steelmaking capacity.

For the broader metalworking sector, the tariffs are intended to provide local mills with breathing space to improve competitiveness and secure investment. Downstream manufacturers will continue to monitor the impact on steel pricing and availability, given the importance of competitively priced material to fabrication and general engineering activities.

While the steel sector has received protection through trade measures, the ferrochrome industry has secured support through energy reform. In a significant development for South African beneficiation, Glencore-Merafe and Samancor Chrome announced that they would cancel planned retrenchments following the approval of substantially reduced electricity tariffs for ferrochrome producers.

Electricity prices have increased sharply over the past two decades, eroding the competitiveness of local ferrochrome production and contributing to the closure of numerous smelting operations.

The approval of discounted electricity rates by the national energy regulator is expected to support the restart of idle capacity and improve the viability of domestic smelting operations. The intervention is particularly important given South Africa's position as the world's largest producer of chrome ore and the strategic importance of ferrochrome in stainless steel manufacturing.

South Africa is also attracting growing international attention as a source of critical minerals. The European Union recently launched its first dedicated investment roadshow in the country, targeting opportunities linked to mineral extraction, processing and beneficiation.

The initiative forms part of a broader European strategy to secure reliable supplies of minerals required for renewable energy technologies, batteries, electronics and advanced manufacturing. South Africa's reserves of platinum group metals, manganese and other strategic minerals position the country as a key partner in these supply chains.

For the local manufacturing sector, the significance of such investment extends beyond mining alone. Increased focus on mineral beneficiation and downstream processing could stimulate demand for processing equipment, materials handling systems, fabrication services and engineering expertise.

Collectively, these developments point to a growing recognition of the need to preserve and expand South Africa's industrial base. Whether through tariff protection, energy support or international investment, the common objective remains the same: Strengthening local production capacity while creating opportunities for greater value addition within the country's metals and minerals sectors.

But to impose tariffs on products that are not made locally does not make sense and points to exploiting local industry somewhat.

Rail is up next, with ArcelorMittal Rail and Structures, a division of ArcelorMittal South Africa, making an application for an increase in the general rate of customs duty on rails, from 5% to 10% *ad valorem*.

Pick your poison, as they say.

South African Institute of Foundrymen

The aim of the SAIF is to promote and develop within Southern Africa the science, technology and application of founding for individuals and involved industries.

Office bearers elected at 2025 AGM

Andrea Moz
Kevin Van Niekerk
Jacques Swanepoel
Antoine Mulaba
Terence Stopforth

Upcoming SAIF Events for 2026

SAIF Annual Golf Day:
November 2026 at
Benoni Country Club

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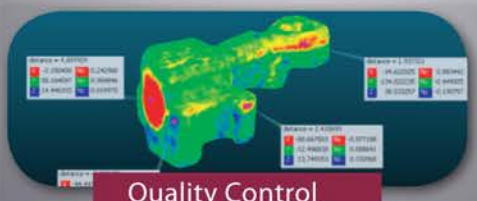

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Environmentally and economically conscious solutions for foundries: How Kaltharz 8500 redefines binder systems

The hybrid binder system driving the next generation of foundries.

The global foundry industry is changing faster than ever before. Foundries are under pressure from every direction: Rising production costs, stricter environmental regulations, increasing customer quality demands, and growing pressure to improve sustainability without sacrificing productivity. At the same time, metallurgical requirements are becoming more complex, especially in the production of high-quality ductile iron and steel castings where sulphur contamination, thermal stability, and reclaimability are critical.

For years, conventional furan no-bake systems carried the industry. High furfuryl alcohol content was considered the benchmark for quality. The formula was simple: High FA content meant strong moulds, fast curing, and reliable production.

But the industry has evolved

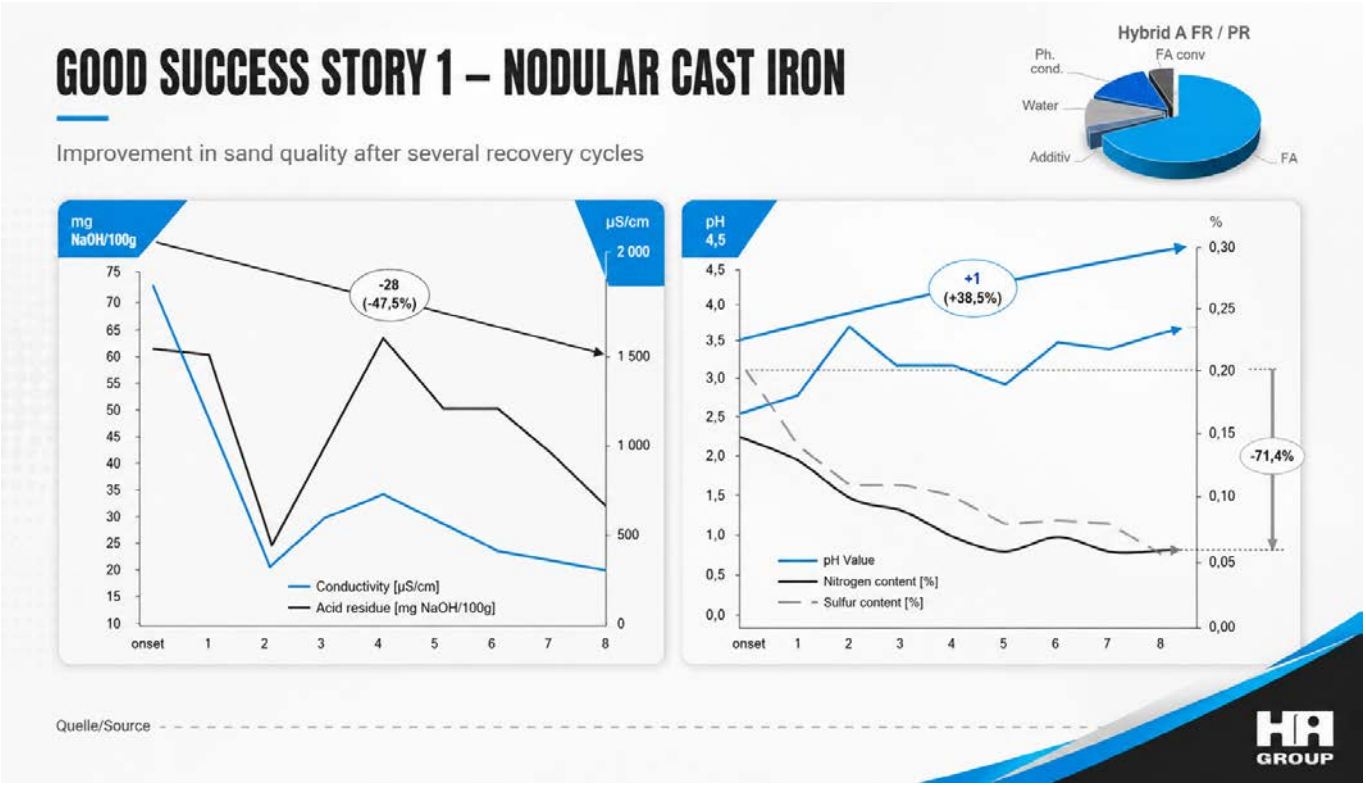
Today, the most advanced foundries in the world understand that modern binder technology is no longer about furfuryl alcohol alone. The future belongs to technological resins, engineered hybrid systems designed to balance performance, environmental responsibility, reclaimability and metallurgical control. This is exactly where DZanetech's Kaltharz 8500 hybrid binder system is redefining the future of foundry chemistry.

Supplied and technically supported by Dzanetech, Kaltharz 8500 represents a new generation of advanced hybrid no-bake binder technology specifically developed for high-performance ductile iron, steel, and grey iron foundries. It is not simply an improvement on traditional resin systems, it is a complete evolution in how modern mould and core systems are designed, cured, and managed.

At the heart of the Kaltharz 8500 family is an advanced Hybrid FR/PR chemistry based on a chemically modified FA-phenolic polymer structure known as PRFuran technology. This hybrid structure fundamentally changes the way curing occurs inside the binder system.

In conventional furan systems, strong sulphuric acid

Global foundry trends continue to shift toward ecological responsibility, economic efficiency, and versatile performance, especially in sectors like mechanical engineering, automotive, mining, marine, and shipbuilding. Yet traditional furan-based no-bake systems, while reliable, are increasingly limited by: High free sulphuric acid content, elevated furfuryl alcohol (FA) levels, emissions, labelling concerns and costly resin and coating dependencies



Unlike traditional furan binders which rely on strong acid activators to achieve curing, Kaltharz 8500 uses a chemically modified resin structure. This structure – referred to as PR Furan or Hybrid FR/PR – enables the binder itself to carry much of the curing responsibility

activators are heavily relied upon to drive the curing process. High sulphur levels are often necessary to achieve acceptable hardening performance, but these systems introduce major operational challenges. Sulphur pick-up becomes a serious metallurgical issue, particularly in ductile iron applications where graphite degeneration near the mould-metal interface can compromise casting quality. High sulphur systems also contribute heavily to CO_2 emissions, aggressive odours, formaldehyde release, equipment corrosion, reclaimability problems, and unsafe working conditions inside foundries. Kaltharz 8500 changes that equation completely.

Through the incorporation of specially modified phenolic polymer structures, the curing power is transferred directly into the resin itself, reducing the dependency on aggressive acid chemistry. This allows foundries to achieve curing characteristics comparable to conventional high-FA systems while significantly reducing sulphur levels and environmental impact.

The scientific results are remarkable. Traditional activators typically contain sulphur levels between 12–15%, with free sulphuric acid levels reaching as high as 3%. Kaltharz 8500 hybrid systems reduce sulphur levels to as low as 5–8%, while maintaining free sulphuric acid levels below 0.3%. This dramatically lowers sulphur pick-up, reduces SO_2 emissions, decreases odour intensity, minimises BTX emissions, improves operator safety, reduces corrosion inside foundry equipment, creates cleaner reclaim systems, and assists foundries in complying with increasingly strict environmental regulations.

Unlike older sulphur-reduced systems that relied heavily on phosphoric acid blends, Kaltharz 8500 avoids many of the reclaimability and vitrification issues associated with phosphoric acid accumulation in reclaimed sand systems. Conventional phosphoric acid systems often caused moisture pick-up in moulds, unstable curing behaviour, reclaim instability, sand grain vitrification during reclaim cycles, and higher fresh sand requirements due to acid accumulation. Kaltharz 8500 eliminates many of these limitations while still maintaining excellent curing performance. This is one of the reasons why ductile iron foundries need this technology more urgently than almost any other sector.

In ductile iron production, sulphur contamination at the mould-metal interface can severely affect graphite formation near the casting surface. Conventional systems often lead to graphite degeneration, reduced surface quality, and costly corrective processes involving zircon coatings. High-performance ductile iron foundries manufacturing automotive components, heavy pump casings, municipal infrastructure castings, marine gearbox housings, and high-specification engineering components are constantly battling sulphur-related metallurgical instability.

Kaltharz 8500 was specifically developed to solve this problem

Real-world foundry results have shown graphite degeneration depths reducing from approximately 500 microns to only 100 microns after transitioning to low-sulphur hybrid systems. These improvements dramatically enhance metallurgical integrity and casting surface quality. More importantly, foundries using the Kaltharz 8500 system were able to eliminate expensive zircon coatings and replace them with aluminium silicate coatings while still achieving excellent casting surfaces and metallurgical stability.

The economic impact of this change is massive

The hybrid system also significantly improves the quality of mechanically reclaimed sand over repeated reclaim cycles. Foundries recorded conductivity reductions of nearly 47.5%, acid residue reductions of over 71%, lower nitrogen accumulation, reduced sulphur contamination, and more stable pH behaviour inside the reclaimed sand system. This translates directly into cleaner sand systems, lower waste generation, improved mould consistency, and significantly reduced fresh sand consumption over time.

For high-volume ductile iron foundries...

These operational improvements create enormous long-term savings. One heavy marine gearbox application weighing approximately 19 tons demonstrated a 23% increase in flexural strength performance after switching to the Kaltharz 8500 hybrid system while simultaneously reducing resin addition from 1.1% to 0.9%. In practical terms, the foundry achieved stronger mould performance while consuming less resin and generating lower emissions. This is where Kaltharz 8500 separates itself from traditional systems: It improves performance while reducing chemical intensity.

Steel foundries may benefit even more dramatically

Steel casting operations face some of the harshest thermal conditions in the foundry industry. Thermal expansion, hot cracking, sulphur contamination, nitrogen sensitivity, and mould stability all become critical process variables. Conventional strong-acid systems can worsen many of these problems through excessive sulphur introduction and unstable thermal behaviour.

Kaltharz 8500 was engineered specifically to address these challenges

The system's nitrogen-free formulation, combined with its controlled thermal behaviour and low-sulphur chemistry, makes it exceptionally effective for steel applications using reclaimed silica and chromite sands. Foundries producing turbine housings, high-alloy steel components, mining equipment, structural steel parts, duplex steels, manganese steels, and stainless-steel castings benefit from improved hot crack resistance, more stable thermal performance, lower sulphur contamination, improved demoulding behaviour, and more stable curing performance.

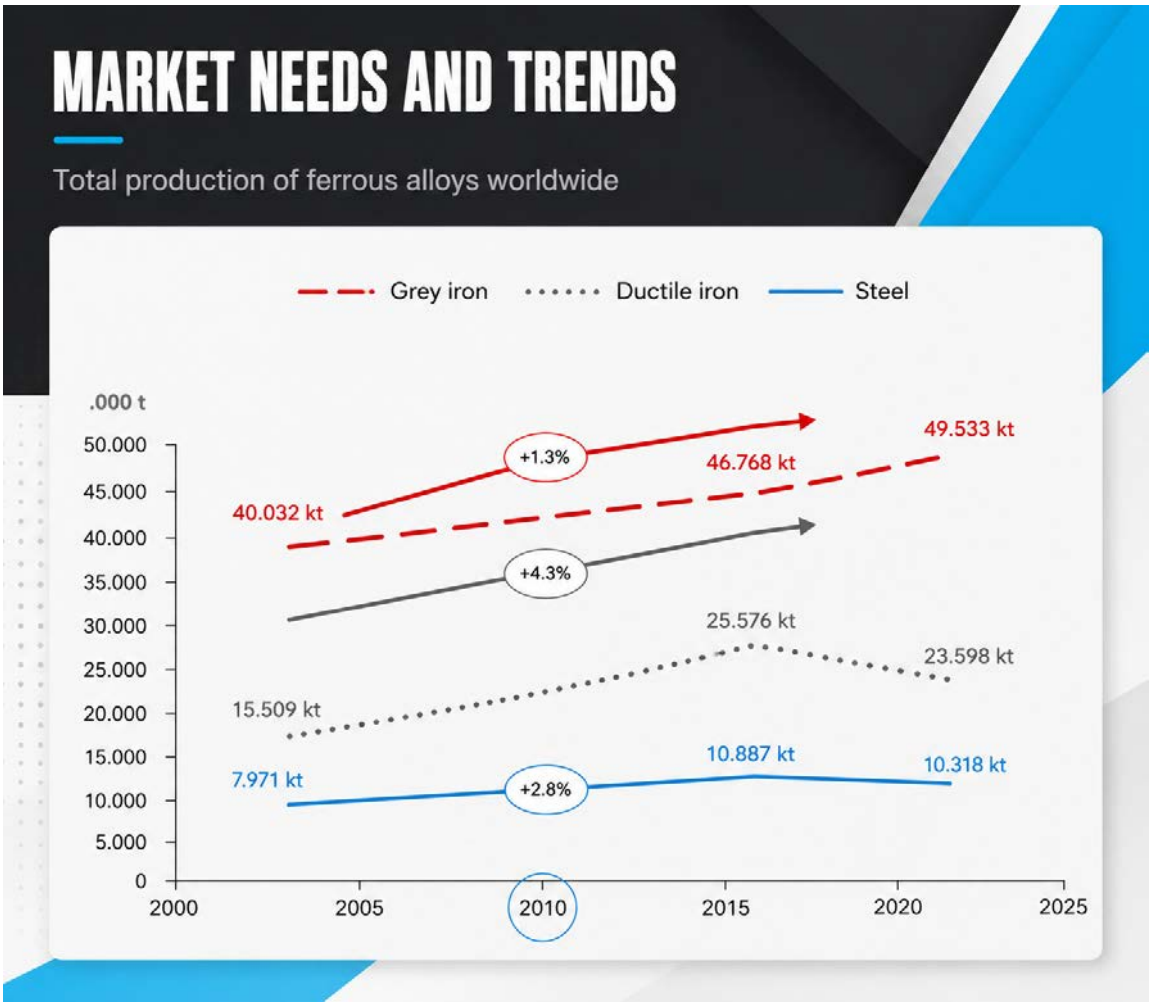
In steel applications, foundries achieved activator reductions of up to 25% by transitioning from strong-acid systems containing 14% sulphur and 2% sulphuric acid to milder activator systems containing less than 1% sulphuric acid and 11% sulphur. The results included improved mechanical strengths, more stable bench life performance, reduced curing instability, cleaner reclaimability, improved workplace air quality, lower chemical exposure, and reduced acid-related equipment corrosion.

These are not theoretical laboratory improvements. These are production-proven industrial results achieved in real foundries globally. Today, the Kaltharz 8500 product family is already successfully operating across foundries in Germany, Turkey, Romania, Spain, Australia, and the Czech Republic, with qualification projects continuing throughout Asia. The HA Group's annual sales volume for the Kaltharz 8500 family has already reached approximately 3 500 tons annually – clear evidence that hybrid technology is rapidly becoming the preferred future for advanced no-bake systems worldwide.

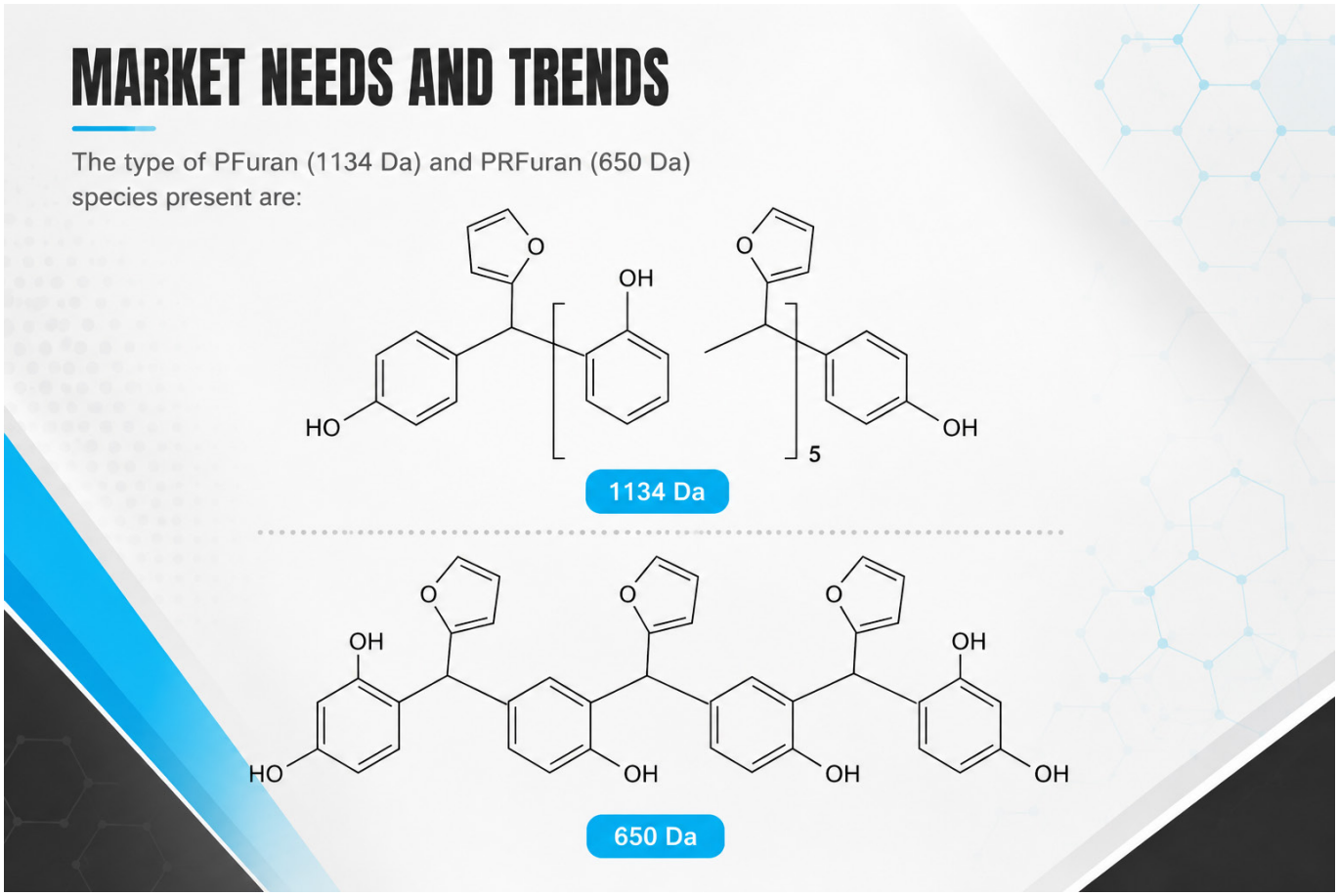
And in Southern Africa, DZanetech is leading that transition

What makes DZanetech different is that the company does not simply supply resin. DZanetech positions itself as a full technical partner in the foundry's operational transformation. Transitioning from a conventional no-bake system to hybrid technology is a process that requires technical expertise, structured implementation, and continuous process optimisation. This is why DZanetech provides extensive technical support throughout every stage of the conversion process.

Using the structured transition methodology outlined for the Kaltharz 8500 system, DZanetech supports customers through detailed project planning, milestone scheduling, verification loops, stop-point evaluations, reclaim sand sampling, laboratory testing, casting quality evaluation, mixer calibration, application engineering support and continuous technical optimisation.



The global foundry industry is changing faster than ever before. Foundries are under pressure from every direction: Rising production costs, stricter environmental regulations, increasing customer quality demands, and growing pressure to improve sustainability without sacrificing productivity



Example of FR/PR hybrid structure. (Attested presence)

Most importantly, DZanetech's experienced technical team work directly alongside customers during implementation to ensure the transition is smooth, controlled, and performance driven. The company's technical support process includes frequent reclaim sand analyses, accompanying laboratory tests, casting quality verification, application management, on-site technical engineering assistance, and close collaboration between local and global product management teams.

Every foundry is different. Sand systems vary. Reclaim systems vary. Production requirements vary. DZanetech understands that successful implementation cannot be achieved through a one-size-fits-all approach. Their technical team works closely with each customer to tailor the Kaltharz 8500 system to the exact operational requirements of the foundry. This partnership approach is one of the biggest reasons why foundries are increasingly trusting DZanetech with their modernisation strategies.

The reality is undeniable: The future of foundry chemistry is hybrid

The industry can no longer afford excessive sulphur emissions, unstable reclaim systems, high chemical exposure, and outdated binder technology. Foundries that continue operating with conventional systems will increasingly struggle to meet the economic, environmental, and technical demands of modern manufacturing.

Kaltharz 8500 provides a clear path forward

Cleaner chemistry. Better castings. Improved reclaimability. Lower emissions. Lower sulphur pick-up. Higher productivity. Better metallurgy. And with DZanetech's experienced technical team guiding every step of the transition, foundries now have access to one of the most advanced binder technologies available anywhere in the world.

For further details, contact DZanetech for Johannesburg on 082 809 7380 (Paul Malone) or Cape Town on 083 454 5465 (Johan Jooste) or for National 066 010 0999 (Zaid Syed) or Technical Support on 083 274 1657 (Koketso Mamogale) or visit www.dzanetech.co.za ■

Foundries are searching for a better way and Kaltharz 8500 delivers

Upholding the legacy of Cecil Zlotnick at P.H. Heat Treatment

P.H. Heat Treatment is one of the oldest commercial metal heat treatment companies in South Africa

P.H. Heat Treatment, one of the oldest commercial metal heat treatment companies in South Africa, sadly lost one of its figureheads in February 2023 with the passing of Managing Member and majority shareholder Cecil Zlotnick.

"The passing of Cecil was a great shock to everyone that knew him," commented Dale Boxshall-Smith who is the Works Director at P.H. Heat Treatment.

"If there was a metal casting Hall of Honour for the foundry and heat treatment industry Cecil would definitely have been recognised, not only for the early adoption of technology like the Nitrex Nitriding process but also for his absolute passion for the industry and those that work in it."

"A legacy is often referred to a bequest in a will or inconveniencing an individual or company with outdated technology still in use. Not so in Cecil's case. The lasting impact as an individual through his accomplishments and character will be embedded in many lives, whether it is family, colleagues or clients. Basically, all that came into contact with him."

"These are the big shoes that we have to fill. But between his wife Brenda, who has been with the company since Cecil acquired P.H. Heat Treatment in 1981, myself, who joined Cecil in 1991, and now Jared his son, who joined the company 6 months ago, we are determined to uphold Cecil's name and build on it."

The company has roots dating back to 1958 when the

two original founders of P.H. Heat Treatment – Danny Pretorius and Pat Hilliard – started a very modest heat treatment operation at 21 Hospital Street, Cleveland,Johannesburg. The staff complement at the time was six people.

The premises were only 300m² in size and all heat treatment was done in a number of box furnaces and a few small temper furnaces. Case hardening was done by carburising in pots with charcoal. The parts to be hardened were then tipped onto a steel plate and one by one, quenched with hooks, into an oil tank. Later another 300m² building next door was obtained and here two cyanide salt baths were installed for case hardening small components. The company used this technology until 1984.

Cecil Zlotnick, a young metallurgical engineer had been working for Afrox for five years during this period and it was his responsibility to market and install nitrogen-based atmosphere heat treating systems for local industry. Then a new exciting innovation – the Endomix system – was launched by BOC in the UK in 1979. Through Afrox's affiliation with BOC, Afrox introduced the system to the South African market and Zlotnick was very involved with the launch.

In 2003 P.H. Heat Treatment separated itself from the rest when it teamed up with Canadian company Nitrex to bring a unique process for controlled gas nitriding and nitrocarburising to the local market. In 2004, the company installed a Nitrex nitriding plant – the only one of its kind in Africa still today

However, in 1980 he was approached by an accountant friend Philip Becker about a business opportunity that had arisen. P.H. Heat Treatment's Danny Pretorius wanted to join his previous partner Pat Hilliard in retirement and had put the business up for sale.

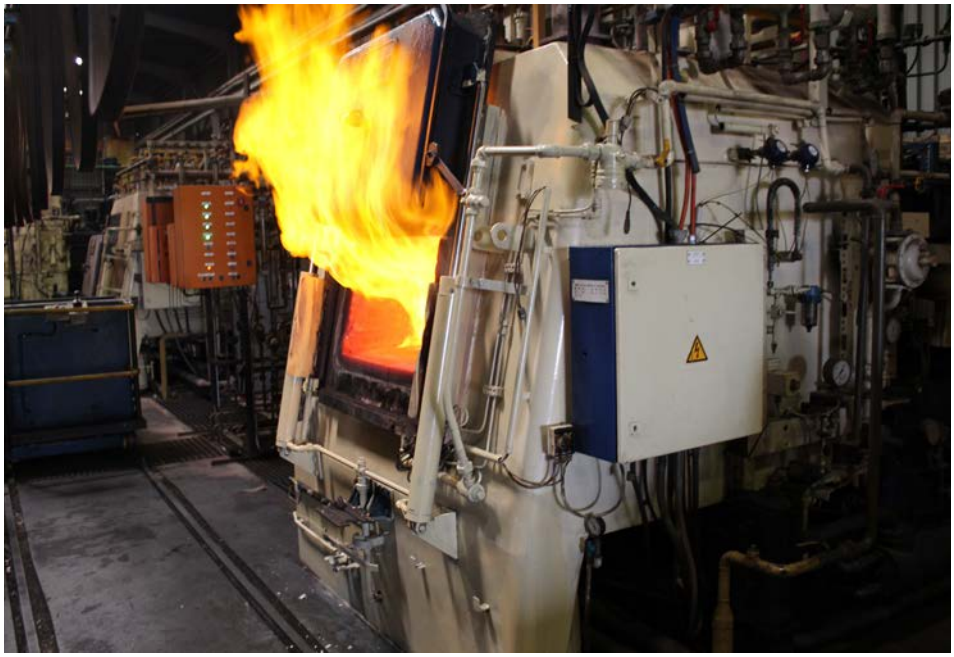
After visiting the facility together Becker asked Zlotnick what he thought. Zlotnick's words, which are documented were: "I shook my head and said: You must be out of your mind – this place is like the pre-industrial revolution. There is no way I will set foot in this hellhole! I looked into the first building. The walls were covered in black dust and the windows were painted green. There was a bad smell of overheated quenching oil coming from an oil tank in the middle of the floor. Quenching oil fumes covered the building in thick smoke. We went to the second building where the cyanide baths were housed and smelled the cyanide fumes. Here the walls were a light grey – dust from the cyanide fumes. In the middle of the floor was a round water tank. The water was like a grey slurry with a grey caked mess all around it. On top of the offices in the building were 50 drums of sodium cyanide – 2.5 tons – enough to kill off the entire population of Johannesburg."

"I asked Danny Pretorius a few innocent questions like: 'Why are the windows painted green?' 'Ah!' he answered. 'I like to check the temperature of the parts in the furnaces by opening the furnace doors and looking at the colour of the steel components inside. When the sun used to shine through the unpainted windows, I could not tell the furnace temperature, so I painted the windows green,' – he told me."

"I asked him why he didn't just read the temperature off the temperature controller at the furnaces. He said he didn't trust them – his eye was more accurate."

"I asked him where his goods receiving and dispatch areas were. He took me into the yard between the two buildings and showed me. 'But what happens when it rains?' I asked. 'No problem,' he joked 'we fish the customers' jobs out of the mud and they go straight into the furnaces. The charcoal takes care of the rust on the parts,' was his explanation."

"Why do you have so much cyanide stockpiled for the two



The company now has 29 furnaces and are able to process up to 500 tons of components per month, depending on the product mix

Today the company's facilities include six Ipsen and four Efco and Birlec sealed quench furnaces using Afrox's Endomix system among its extensive range of capital equipment

The company has a fully equipped modern laboratory and have just completed the installation of an advanced Metkon Servocut-302 fully automatic cut-off system that was supplied by foundry and laboratory equipment supplier SPS

small cyanide pots? I enquired. 'Ah!' he replied, 'I've been told that cyanide is going to be unavailable in South Africa in future, so I decided to buy a three-year supply, just in case,' he said."

Zlotnick continued: "I told Danny I was concerned that the oil was allowed to get so hot. He replied that the oil cooler was undersized, so quenching could only be done between 7 and 11am each day. Thereafter the oil would have to cool for the next day's quenching."

"Philip replied saying: 'I know nothing about heat treatment but on paper, this is a good little business, making a fair monthly profit and having a substantial customer base.' Well after much persuasion and a promise to modernise the company, I agreed to take a big risk and to give up a good managerial job at Afrox and to take the plunge. With money borrowed from a bank, we bought P.H. Heat Treatment at the beginning of 1981."

Zlotnick then went to the UK and purchased the company's first sealed quench furnace, which was second hand, and a matching temper and a shaker hearth furnace. The company also installed an Afrox Endomix gas atmosphere system to supply gas to the equipment.

As Zlotnick said: "I went from being an Afrox employee to Afrox customer. But it was the start of the modern P.H. Heat Treatment. We were now able to do modern processes such as neutral, scale-free hardening, gas carburising and carbonitriding and as a result, the company grew to a point when we installed the second sealed quench furnace and in 1984, the company then purchased three large Ipsen sealed quench and temper furnaces and moved to 17 Activia Road, Activia Park where we are still situated today. The salt baths were demolished, 9 of the 10 box furnaces were scrapped as was the old pack carburising charcoal process."

P.H. Heat Treatment work 24 hours a day, 7 days a week

In 1991 Becker left the company after deciding to emigrate to Canada and Dale Boxshall-Smith joined the company, bringing with him 10 years of heat treatment experience. In 1994 he became a partner in the business.

The company now has 29 furnaces and are able to process up to 500 tons of components per month, depending on the product mix. It also has state-of-the art automatic process controllers, with carbon control based on

oxygen probe.

"All the furnaces are fitted with Eurotherm temperature controllers and programming which allows us to plan very efficiently. The planning function has been a big positive. What used to take two planners a whole day can now be done in 30 seconds. That relieves a lot of stress."

Speciality niche market: Nitrex Nitriding

P.H. Heat Treatment grew from strength to strength, focusing on and becoming the leader in the field of controlled furnace atmosphere heat treatment, its speciality niche market. Today the company's facilities include six Ipsen and four Efco and Birlec sealed quench furnaces using Afrox's Endomix system among its extensive range of capital equipment. Other capital equipment includes shaker hearth furnaces, tempering furnaces, facilities for sub-zero treatment, glass and shot blasting.

In 2003 P.H. Heat Treatment separated itself from the rest when it teamed up with Canadian company Nitrex to bring a unique process for controlled gas nitriding and nitrocarburising to the local market. In 2004, the company installed a Nitrex nitriding plant – the only one of its kind in Africa still today.

"This niche range of heat treatment processes, applied particularly to steel components, can provide unique combinations of wear and corrosion resistance to engineering components, together with resistance to scuffing and seizure," Zlotnick explained at the time.

"We were the first licensee in Africa and today we hold exclusive rights to the Nitrex's Nitreg®, Nitreg® C, ONC® and Cor-Check® gas nitriding technology processes for South Africa. Our multi-purpose two-ton capacity NX-1015 Nitreg® pit furnace was the first of its kind in Africa."

New Metkon Servocut-302 fully automatic cut-off system

The company has a fully equipped modern laboratory and have just completed the installation of an advanced Metkon Servocut-302 fully automatic cut-off system that was supplied ▸

P.H. Heat Treatment process 1 000s of components in a month

P.H. Heat Treatment's services are used by OEMs, contractors and general engineering companies across many industries

P.H. Heat Treatment offers stress relieving, annealing, normalising, hardening, tempering, blackening, carbon restoration, case hardening (carburising; carbonitriding; lamda processes) and gas nitriding

by foundry and laboratory equipment supplier SPS.

"A powerful step forward in delivering precision, productivity and reliability to the P.H. Heat Treatment laboratory. Built with a robust, modern, and low-emission design, this high-performance machine features a 4kW cutting motor that delivers fast, efficient cutting through even the hardest and most complex materials."

"Their precise motor-driven axis controls ensure accuracy and repeatability in every cut," explained Boxshall-Smith, who has been with the company for 35 years.

Unique software

"Besides his exceptional metallurgy knowledge Dad was very good at keeping information on each client. Since 1998 he has been developing a unique software programme that is dedicated to P.H. Heat Treatment. Based on the Microsoft Access database management system the software lets you store, organise, and manage structured business data without requiring advanced programming," said Jared Zlotnick who has a corporate banking background but has been part of Dad's company from a young age.

"Every single client that the company has dealt with is listed in this software. Each client 'file' includes all the relevant information of what component, process, temperature and any other relevant information on every order from the client, whether new or repeat. It is a powerful and very useful tool for the company."

"However, it is a bit 'clumsy' and we are busy converting the data into a more modern platform that will have a user-friendly interface and features for organising, storing and retrieving data. The system will also have an engine to build custom forms, reports, and queries before transferring the relevant information into invoicing and statements."

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Malleable Castings boosts foundry efficiencies with new automation and additional equipment

Nine years ago, Malleable Castings began a programme to boost efficiency, enhance productivity, improve casting quality, increase cost savings and improve overall working conditions while taking into account environmental concerns. Improvements included the investment in a horizontal moulding line. Additionally, the aim was to reduce the company's reliance on and to 'retire' the existing 10 manual jolt squeeze moulding machines because the human involvement gives consistency and quality problems, as well as a decline in productivity levels.

"That investment in new equipment was the first capital expenditure that the company had undertaken since the 1980s other than an investment in a new 3-ton medium frequency 1.5 megawatt furnace to replace a furnace that was way past its sell-by-date. When I joined the company in 2011, I was given a challenging task to improve productivity, improve quality, reduce costs and scrap rates in a foundry that was operating in the 19th century and there was a reluctance to provide funds for expenditure on modern foundry manufacturing equipment due to declining economic activity," explained Divisional Managing Director Ben Dyson.

"Such was the improvement in our moulding operation once we had installed the new horizontal moulding line, that it drove us to investigate a further investment in this department, as well as in the other departments in the foundry and in the finishing area."

"In 2019 we installed a second HMF automated horizontal moulding machine. This machine has a workable moulding area of 460mm x 360mm x 150mm and the moulding rate is 40 moulds per hour. The automated line is also equipped with a mould manipulator and conveyor system for easy handling of the moulds, also ensuring the minimum cooling time for ductile iron is met."

"The automated hydraulically operated machine has been custom built to suit our needs and we have already reduced our scrap rates enormously with the consistent and reliable manufacture of green sand moulds. Productivity is also reaching record levels."

"The scope of our capabilities in terms of the castings weight range from 0.1 kilogram to 30 kilograms."

HMF rotary drum

In between these two installations, Malleable Castings have also invested in a new HMF rotary drum machine that has the capability of processing 10 tons per hour. This machine was installed in December 2018. The drum diameter is 1.5m and it has a length of six metres.

"There are two finishing processes for handling high volumes of metal parts – vibratory machines and barrel tumblers."

Further investments

"The theme of tired equipment continued in the coated sand core shooting department. However, this has now changed with the installation of a Delin DL361 fully automatic, electrically heated, shell core shooter with a core box size of 400mm x 250mm x 150mm, in December 2018."

"Due to its success, the company subsequently added a second DL361 and two smaller units with identical core box capacity."

"The core shooting process is now fully automated with automatic core ejection and mould turning down to release cores onto an automatically indexed conveyor. The machines, once set, only need someone to trim and pack cores, reducing operator costs significantly. We are currently using one operator for 2 machines. This is a game changer compared to the old

Malleable Castings partnered with their equipment suppliers to develop an automated solution for repeatability and consistent quality in a specific fettling operation. The result is a CNC operated robotic arm that is an automated, 5-axis industrial manipulator programmed to perform the fettling operations of removing the flashing and ingates

In the coated sand core shooting department, Malleable Castings has two Delin DL361 fully automatic, electrically heated, shell core shooters with a core box size of 400mm x 250mm x 150mm and two smaller units with identical core box capacity

manual type machines. We have reached a point where the foundry no longer waits for cores, we have a huge buffer ready waiting to go to the foundry. The electrical heating of the core box in an enclosed machine is also more efficient than the old type gas heated open machines."

CNC fettling machine

"A number of the components that we cast are repetitive and in high volumes. And they all require some form of fettling, a foundryman's worst nightmare in terms of time consumed and consistency."

"Finishing of castings in foundries can be done in a variety of ways and you would require a wide range of tools for fettling with manual or automated processes. Generally, the materials of the castings are very hard and, as a result, the removal of excess material after casting has to be done with high-performance tools."

"But in terms of quality and consistency manual labour can never achieve the repeatability that you are looking for. When the shift starts you might get close to repeatability but that declines the longer you go into the shift. And it is only because of tiredness and the operator being bored, especially if it is a repeat casting for the full duration of the shift. And we do have a number of casting components that run into the many hundreds."

"We partnered with our equipment suppliers to develop an automated solution. The result is a CNC operated robotic arm that is an automated, 5-axis industrial manipulator programmed to perform the fettling operations of removing the flashing and ingates. If necessary, it can be programmed to do other fettling operations such as trimming, grinding, chipping, pencil grinding, removing burrs and polishing of cast metal parts."

"The machine is fully enclosed for safety reasons and was delivered in November 2025. It uses specialised end-of-arm tooling. The arm presents the component to a fixture that houses a CBN grinding wheel, which is programmed to perform the operations that you want done."

"We have done time studies and the manual cycle was taking 45 seconds whereas the CNC operation takes 40 seconds. That is not a huge saving but it is the repeatability and consistent quality that counts, as well as the reduced operator fatigue."

"Currently we are processing 5 high-volume ductile iron components on the machine and a second machine is scheduled for installation in June 2026. One operator will run both machines and that includes loading and unloading."

Currently Malleable Castings are processing 5 high-volume ductile iron components on the automated 5-axis fettling machine and a second machine is scheduled for installation in June 2026. One operator will run both machines and that includes loading and unloading

"What is impressive is we have not had to replace the expensive CBN wheel yet – and it has done over 70 000 components already."

Data-driven green sand quality control

Participation in the NFTN Sandman initiative has further strengthened the company's focus on green sand quality management. Recognising that green sand quality is

Malleable Castings have recently acquired some rail transport contracts

Malleable Castings has also invested in a 2-ton an hour continuous mixer for alkaline phenolic no-bake moulding, enabling the foundry to manufacture larger castings beyond the dimensional limits of its green sand operation

fundamental to casting performance, Malleable Castings invested in upgraded laboratory testing equipment, including a green sand universal tester and a permeability tester.

"The decision followed a benchmarking visit to a major Chinese foundry operating two modern Disamatic lines with a 160TPH green sand plant."

"Our casting finish has improved substantially through continuous testing, data analysis and regular process adjustments," said Dyson.

Expansion into no-bake casting

Malleable Castings has also invested in a 2-ton an hour continuous mixer for alkaline phenolic no-bake moulding, enabling the foundry to manufacture larger castings beyond the dimensional limits of its green sand operation. The HMF-supplied system includes a user-friendly control platform with remote connectivity, which simplified commissioning and operator training.

"This is a new area for us, but it is already opening additional business opportunities," commented Dyson.

Since its acquisition by West Rand Engineering (WRE) in 2017, Malleable Castings has undergone a significant cultural and operational transformation through targeted, affordable strategic investments.

WRE is part of Baobab Industrial Group, a diversified industrial group that includes Klambon Water, LubeMasters, Africa Thermal Insulations, DLM, Metermatic and the Section Poles Group.

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For further details contact Malleable Castings on TEL: 011 822 1503 or visit www.malleable.co.za ■

Recognising that green sand quality is fundamental to casting performance, Malleable Castings invested in upgraded laboratory testing equipment, including a green sand universal tester and a permeability tester

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ITAC increases tariffs on wide range of steel products

South African importers face immediate higher duties on a wide range of steel and downstream metal products, while uncertainty remains over rebate permits for shipments already on the water.

The International Trade Administration Commission (ITAC) has finalised its review of South Africa's steel import duty structure, with SARS publishing the implementation gazette on May 15. The changes introduce higher tariffs on several steel categories, alongside rebates for certain products that the local industry cannot manufacture and supply.

However, to qualify for the rebate, importers will have to apply to ITAC for permits, and with guidelines not yet published, there is uncertainty regarding shipments that are already in transit.

The duties announced will apply to products such as flat-rolled iron or non-alloy steel, as well as bars, rods, tubes and pipes. Previously, South Africa applied tariffs of zero to up to 15% on these products.

The newly implemented import duties cover the following categories:

- **10% Duty:** Flat-rolled, electrical, and alloy steel products, as well as bars, rods, sections, and angles.
- **15% Duty:** Welded and seamless tubes and pipes, fittings, tanks, drums, wire ropes, fencing, chains, screws, and staples.
- **20% Duty:** Hand tools, saws, wrenches, hammers, pliers, screwdrivers, interchangeable tooling, and household knives.
- **30% Duty:** Select fittings, washers, and steel baths.
- **Anti-dumping Duties (up to ~75%):** Specific U-sections, I-sections, and H-sections of iron or non-alloy steel imported from China and Thailand.

"We are hoping that this decision will provide the local industry necessary space to adjust in a manner that allows them to invest in their capability," said ITAC Chief Commissioner Ayabonga Cawe in a Business Report interview.

The tariff adjustments would not affect preferential treatment for certain geographies, he added.

Steel consumption

Imports make up about 36% of South Africa's total steel consumption, with China accounting for 73% of imports, according to the South African Iron and Steel Institute (SAISI).

South Africa also imposed steep import duties on structural steel imports from China and Thailand in March after finding evidence of dumping.

SAISI says South Africa's imports of downstream steel products increased by 5% year-on-year during Q1 2026, rising to 167 453 tons, while average import prices declined by 9.1%. Significant growth was recorded in structural steel, wire products, fabricated articles, fasteners, and infrastructure-related products, highlighting rising import penetration across value-added manufacturing segments. The latest SARS data reinforces growing concerns regarding the displacement of domestic manufacturing capacity and the increasing leakage of infrastructure-driven demand toward imported steel products rather than local industry.

ITAC found that South Africa's steel sector is facing serious challenges caused by global overcapacity in steel production, cheap imports, especially from China and India, trade diversion as countries impose higher tariffs, weak domestic demand, high energy and logistics costs, customs fraud, under-invoicing and tariff circumvention.

With that in mind, 20% duties were imposed on products such as spades, shovels, timber wedges, hand saws, knives and cutting blades, rods and tubes, which were previously free of tariffs. Similarly, screws, bolts, nuts, coach screws, screw hooks, rivets, pins and washers will now attract 30% duties.

"We are seeing massive price injury in the form of cheap steel products landing in South Africa below even a comparable cost of production," said Cawe.

According to ITAC's report, the current global conditions warranted consideration of emergency safeguard measures under the General Agreement on Tariffs and Trade (GATT). The Commission also raised concerns over geopolitical instability and the growing use of trade restrictions globally.

Cawe said the crisis was not limited to South Africa, with countries across the world facing the consequences of massive global steel production capacity that far exceeds demand.

Cawe noted that countries such as China, India and Turkey had dramatically expanded steel production over the past two decades, while major economies such as the European Union (EU) had responded by introducing tougher trade barriers.

"The EU has had rolling safeguard measures, which they are now transitioning to a 50% duty. South Africa's steel industry had experienced a dramatic collapse in production and employment over the past two decades. In 2005 we produced 9.7 million tons of steel in South Africa. We produce at this point probably around half or less than half of that number," he said.

Cawe also pointed to severe job losses within the sector as a result of the influx of cheap steel into the country. "At the end of 2009, over 50 000 people worked in the basic iron and steel sector. You now have at the end of 2025 less than half of that number."

The ITAC report noted that more than 150 submissions were received from industry stakeholders during the review process, including requests for higher duties and new rebate provisions.

Though several companies had asked for steep tariff hikes, including increases of up to 65.55%, the Commission recommended that the rate of customs duties on products be increased to their respective World Trade Organisation bound rates, in order to address import surges, price undercutting and duty circumvention affecting the domestic steel industry.

A notice sent out by XA Global Trade Advisors notes that duty rebates on specific steel products are available where those products are not made locally. These include semi-finished billets, aluminium-zinc coated coil, H-sections, wire ▸

rod, rails, as well as seamless and galvanised tubes.

The devil, however, is in the detail: Some of these rebates are only available to defined end uses such as hot plate stoves, domestic fridges and freezers, steel garage doors, as well as port and water infrastructure.

Anyone applying for rebates will have to apply to ITAC, creating bureaucratic delays that many businesses dread.

Import growth concentrated in strategic downstream categories

According to SAISI several downstream product categories recorded significant import growth during Q1 2026.

Among the strongest increases were:

- Wire rope and cable imports, which increased by approximately 49.4% year-on-year to 12 251 tons;
- Structures, towers, scaffolding and bridge components, which rose by approximately 58.8% to 20 625 tons;
- Articles of wire, forged products and miscellaneous steel articles, which surged by approximately 66.2% to 19,832 tons;
- Springs imports, which increased by approximately 82.6% year-on-year; and
- Nails, tacks and staples imports, which nearly doubled from 2 298 tons to 4 526 tons.

These categories are particularly significant because they sit deeper within the manufacturing value chain and support a broad network of domestic fabrication, engineering, construction, mining and infrastructure-related industries, continued SAISI.

The continued growth of imported fabricated products therefore raises concerns not only for primary steel producers, but also for downstream manufacturing ecosystems that rely on stable domestic steel supply chains said SAISI.

However, we all know about AMSA and its closing of mills and getting support from ITAC and the dtic with duties being imposed. The closing of the AMSA plants in Saldanha Bay and Newcastle have forced companies to look elsewhere for supply, especially when you hear comments like: “Purchasing hot-rolled steel from AMSA’s Vanderbijlpark plant is more expensive than importing it and paying the duties,” and, “I can import the casting machined and finished at less than the cost of a casting made locally.”

And it was not so long ago that we saw the demise of Evraz Highveld Steel.

We also read about how South Africa sits atop an estimated 80% of the world’s economically viable chrome ore reserves, the foundational raw material for stainless steel production worldwide, and yet South Africa has lost its ferrochrome dominance. The scale of the market share erosion that has taken place over the past 25 years is difficult to overstate. In 2001, South Africa accounted for roughly 51% of global ferrochrome output.

Today, that figure has contracted to approximately 10%. Over the same period, China’s share expanded from around 5% to 65% of global production, despite China possessing negligible domestic chrome ore reserves of its own.

Ferrochrome represents a crucial value-added product in the global mining sector, multiplying the value of raw chrome ore approximately five times through sophisticated processing techniques.

This strategic alloy, primarily composed of chromium and iron, serves as the essential ingredient that gives stainless steel its signature corrosion resistance and durability properties that make it indispensable across numerous industries.

You have to ask what impact this has on Columbus Stainless, founded in 1966, South Africa’s and Africa’s only producer of stainless steel flat products.

The new tariffs will clearly benefit some in the steel value chain and prejudice others. Either way, the tariffs impact disallows free and fair competition to downstream users.

But to impose tariffs on products that are not made locally does not make sense. Equally, to impose tariffs on metalworking tools such as cutting and removal tools, forming and shaping tools, joining tools and many others – the majority of which are not made locally and are essential tools in producing, manufacturing and machining steel into the desired components – is pointing towards exploiting the local industry.

Besides the automotive industry, key technologies rely on this tooling. Many, many industries rely on this tooling. Does ITAC and the dtic not realise that raw material prices to make this tooling are rising rapidly and have to be passed on because the OEMs can only absorb a certain amount. And now they impose an extra 20% tariff! ■

Cutting tools hit with 20% tariff:
Tariff code 82007

Picture used for illustrative purposes only

South Africa's ITAC has imposed the steepest and broadest steel tariffs – the biggest protectionist move in two decades – to shield the local industry from cheap imports, it says. However, the levies could create a seismic shift in trade relations between South Africa and its trading partners, especially China, its biggest one. But more importantly every industry and product where metal is used and requires some form of tool to cut, shape, and remove material from a workpiece by means of machining tools will be impacted.

The move by ITAC came after the conclusion of its biggest steel tariff review in 20 years, which covered about R67 billion worth of imports. The review finds that South African steel industry stakeholders face numerous challenges and that many major economies impose big tariffs to protect their domestic industries amid global steel overcapacity and associated trade diversions.

With that in mind, 20% duties were imposed on products such as spades, shovels, timber wedges, hand saws, knives and cutting blades, rods and tubes, which were previously free of tariffs. Similarly, screws, bolts, nuts, coach screws, screw hooks, rivets, pins and washers will now attract 30% duties. However, rebate provisions have been proposed that will enable duty-free imports of steel products that are not manufactured locally, including certain rails, wire rods, pipes and heavy structural steel. According to ITAC, the rebates are intended to protect downstream manufacturers from unnecessary cost increases if local supply does not exist.

We have been reliably informed that hidden in amongst the tariffs is a 20% tariff on metalworking tools such as cutting and removal tools, forming and shaping tools, joining tools and many others – the majority of which are not made locally and are essential tools in producing, manufacturing and machining steel into the desired components.

The extra 20% tariff on top of the price increases due to the increasing prices of raw materials, will be very difficult to be absorbed by the OEM manufacturers of these tools and will ultimately be passed on to the downstream users of tooling.

Leading local manufacturers and tooling importers and exporters were asked for their opinions. Allan Conolly, Managing Director, Somta Tools commented: "The concept of initiatives to boost the South African steel industry in general are welcome, and tariffs can play an effective role in these initiatives. However, despite our submission to ITAC to leave tariffs unchanged, new tariffs were introduced for the cutting tool related industry and actually place Somta Tools at immediate and substantial risk for the following reason: Import tariffs were introduced for the first time for high-speed steel (10%) and tungsten carbide rod (20%), from non-trade agreement regions (previously these items were imported duty free). The vast majority of these products are not produced at all in South Africa (and never have been) and will threaten Somta's export competitiveness with immediate effect."

"In addition, the companies who import competitor product from regions where duty free trade agreements exist, will have an advantage over local manufacturers who generally import this high-speed steel and tungsten carbide raw material from regions where trade agreements do not exist."

"As South Africa's largest manufacturer and exporter of cutting tools, our submission was disregarded and now puts multiple skilled jobs at risk unless we can secure an urgent rebate agreement which we are immediately pursuing. If we cannot secure a full and total rebate from ITAC, it is likely to result in substantial skilled job losses in the near future."

"The intended benefit of the boost in local demand is largely unknown and the majority of jobs at our Pietermaritzburg, KwaZulu-Natal-based factory are based on our export market."

Gavin Adams, Managing Director at Iscar South Africa said: "This tariff is a major setback for local manufacturing. It is difficult to believe the severe fallout on end-users was

properly researched, especially given the current pricing volatility across global markets."

"The government has specifically targeted manufacturing and mining to stimulate economic growth and create jobs. Yet, both industries stand to be crippled by this very decision – a clear sign of a policy disconnect."

"By driving up local production costs, this tariff directly erodes our ability to compete with cheap foreign imports. The predictable result? A net loss for local factories, widespread job cuts and a massive victory for cheap imports at the expense of local industry."

"Consequently, this presents a critical opportunity for local suppliers to collectively voice our concerns and address the negative impacts of this tariff implementation moving forward."

Gerald Green, Managing Director of Gühring South Africa concurred with the sentiment: "Currently the surcharges imposed on carbide and HSS/HSSE products are significant and are already passed on to the end user. Any further duties will be catastrophic for the manufacturing industry. Imagine the impact on unemployment!"

"Ironically ITAC claims to create an enabling environment for fair trade through efficient and effective administration of its trade instruments, and provide technical advice to the Department of Trade, Industry and Competition (the dtic) but it seems nobody is listening or learning."

Neels van Niekerk, chair of International Steel Fabricators of South Africa, argues that protection is needed to prevent further deindustrialisation of South Africa.

"By nature, manufacturing value chains are schizophrenic. Every level wants free inputs but fully protected output. Our criticism remains that government is fixated on steelmaking, which accounts for just 5% of employment and 13% by value of the steel-intensive industries, instead of focusing on the 95% by employment value-added industries."

The new duties do not amount to special protection for ArcelorMittal SA, which has received numerous tariff protections in recent years. All of these are within the rules allowed by the World Trade Organisation. ■

Hillside Aluminium celebrates 30 years of production

Hillside Aluminium, located in Richards Bay, KwaZulu-Natal is celebrating 30 years of aluminium production which has supported thousands of local jobs, boosted the local and national economies, and delivered improvements to infrastructure and services in local communities.

The milestone was marked at a gala event attended by President of the Republic of South Africa Cyril Ramaphosa, Energy Minister Kgosientsho Ramokgopa, Trade and Industry Minister Parks Tau, local and provincial leaders, members of South32's leadership team, and many of Hillside's past and present employees.

Image source: south32.com

Officially opened by President Nelson Mandela on 19 April 1996, Hillside was part of an ambitious vision by South Africa's new democratic government and industry to grow industrial capacity and create jobs, bolster international trade and contribute to local downstream beneficiation.

South32 Chief Executive Officer, Graham Kerr said, "Hillside's success over the past 30 years is a testament to what can be achieved through collaboration between the private sector and the government. By strengthening local supply chains, stimulating downstream manufacturing and reinforcing government's priorities to grow the economy and create jobs, Hillside has been a powerful catalyst for growth."

"We are particularly proud of Hillside's role in supporting the domestic downstream aluminium industry as a supplier to local companies that manufacture products for sale domestically and abroad."

South32 Chief Operating Officer, Noel Pillay, said, "Hillside Aluminium provides a strategic supply of aluminium to local industries in South Africa, and globally. Hillside's role in driving economic development has meant thousands of people have been employed directly and indirectly in the uMhlathuze Local Municipality and the King Cetshwayo District Municipality in KwaZulu-Natal."

"We are immensely proud of Hillside's investment in local communities, which focus on improving education, economic participation and health outcomes. Its social investment programme has reached more than 5 million people over the past five years alone. We look forward to Hillside continuing to play a critical role in South Africa's growth and development story."

The Hillside Aluminium smelter is located in Richards Bay, KwaZulu-Natal, about 180 kilometres north of Durban. It is the largest aluminium smelter in the southern hemisphere and only primarily producer in South Africa, producing high-quality, primary aluminium for domestic and export markets. When it was built in the early 1990s, Hillside was South Africa's single largest private sector investment and remains one of the country's biggest industrial projects.

The smelter took two years to build, opening ahead of schedule with an initial capacity of 500 000kt per year. Following an expansion in 2003, it continues to test its maximum technical capacity with annual production of 720 000kt.

Today, Hillside supports the employment of approximately 1 100 permanent employees and approximately 2 550 indirect on and off-site jobs. Through the aluminium value chain, Hillside provides the foundation for an estimated 29 000 jobs across the economy, and from 2015 to 2024 contributed approximately R35 billion to South Africa's gross domestic product.

Hillside is a cornerstone of South Africa's aluminium value chain. It has partnered with the Automotive Industry Transformation Fund (AITF) and the Department of Trade, Industry and Competition (dtic) to provide financial support to Bingelela Alloys to expand the production of rim alloys that are supplied to manufacturers in South Africa, with final goods being used by the automotive industry including BMW and Toyota.

Hillside is working towards providing funding support for an aluminium rod manufacturing facility in Richards Bay. This facility aims to supply local content in support of Eskom's plans for a 14 000km grid expansion. In addition, Hillside is working with local partners on a potential dross plant and a billet alloy plant.

Hillside is Eskom's single largest industrial customer, with its consistent electricity demand profile playing an important role in keeping South Africa's electricity grid stable and delivering significant revenue to Eskom annually. South32 is continuing to work collaboratively with Eskom to deliver a long-term energy solution that supports Hillside's competitiveness, contributes to regional economic stability and industrial growth, and aligns with South Africa's broader decarbonisation objectives.

Hillside Aluminium's unique position in Richards Bay, with its port and energy infrastructure that supports 24/7 operations, means it is well positioned to continue to play an important role in the development of the city and province, and to the broader South African economy. ■

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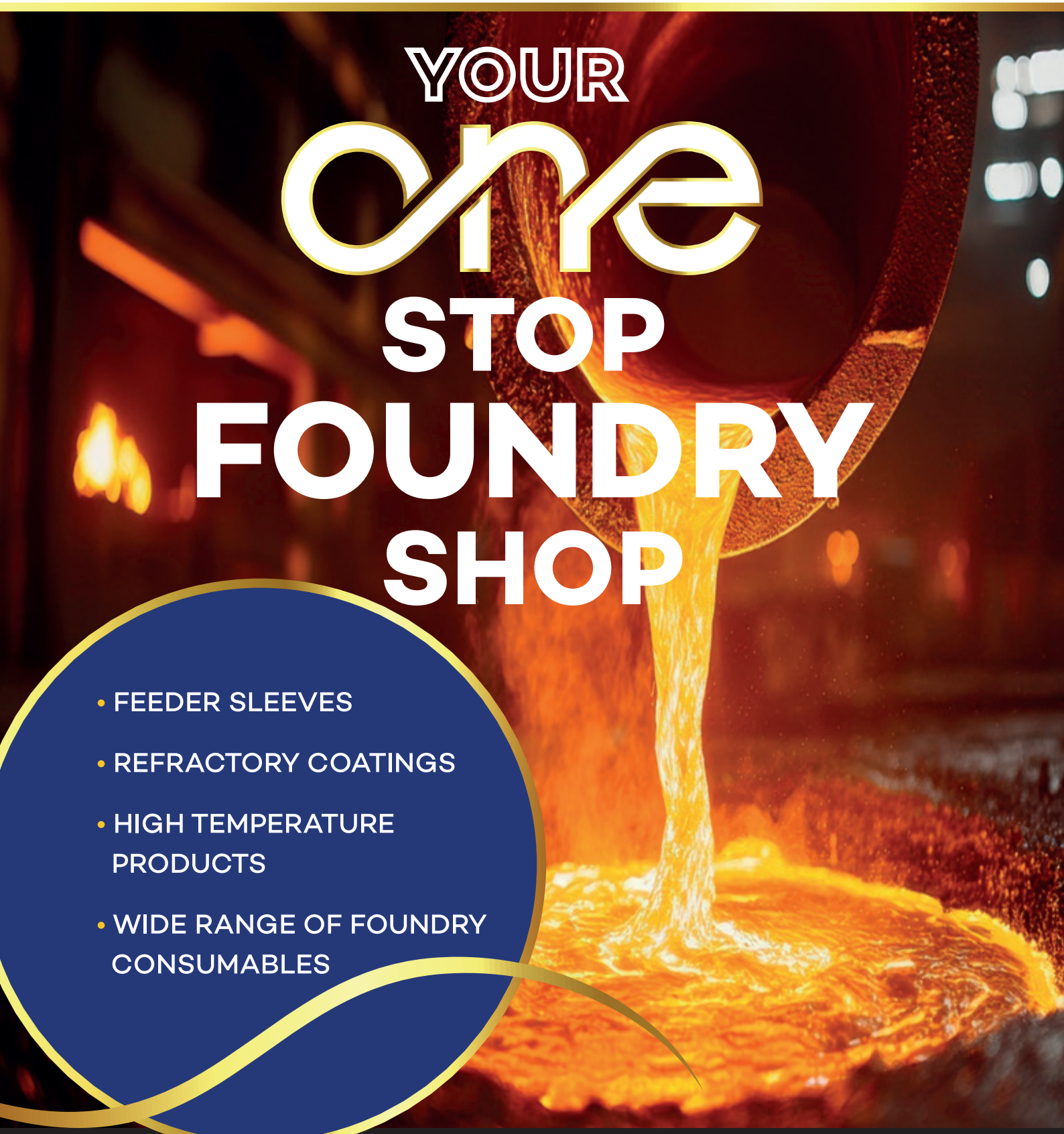

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Mozal shutdown exposes Africa's aluminium production vulnerability as Q1 2026 output falls 6.2%

According to a report in AL Circle Africa's aluminium sector entered 2026 facing a difficult question: How exposed has the continent's supply chain become to power disruptions and concentrated production risks? The concern intensified after regional aluminium production declined to 381 000 tons in Q1 2026, marking a 6.2 per cent drop from 406 000 tons in Q4 2025 and a 3.3 per cent Y-o-Y decline compared with 394 000 tons in Q1 2025. The decline exposed how dependent Africa's aluminium chain remains on concentrated production hubs, fragile electricity systems and climate-sensitive infrastructure.

Africa's aluminium output looked stable through 2025 – so what changed?

For much of 2025, Africa's aluminium production remained relatively balanced. Output increased from 394 000 tons in Q1 2025 to 407 000 tons in Q2, reflecting quarterly growth of around 3.3 per cent. Production then edged slightly higher to 408 000 tons in Q3 before easing marginally by nearly 0.5 per cent to 406 000 tons in Q4 2025.

Behind that stability, however, production remained heavily concentrated in a few parts of Africa. South Africa and Mozambique continued to account for most of Africa's aluminium output, making the region increasingly vulnerable whenever disruptions emerged in either market.

South Africa maintained relatively stable production during 2025, supported by mature smelting operations and established export networks, with aluminium output increasing from 716 000 tons in 2024 to 722 000 tonnes in 2025, retaining its position as Africa's leading producer. Mozambique, however, remained more exposed to operational disruptions and electricity shortages, with production volatility becoming increasingly visible after 2022 despite signs of partial recovery, although output still rose slightly from 511 000 tons in 2024 to 522 000 tons in 2025.

Elsewhere, Egypt maintained relatively steady output, while Cameroon and Ghana remained smaller contributors with limited growth momentum. Cameroon's aluminium production is estimated to decline from 60 000 tons in 2024 to 50 000 tons in 2025. Egypt is expected to record a modest recovery from 288 000 tons in 2024 to 295 000 tons in 2025, while Ghana's output is projected to remain unchanged at 29 000 tons in both years. A broader assessment of these shifting production trends and their impact on the global market is explored in "Global Aluminium Industry Outlook 2026."

Then Mozal went offline and the market changed quickly. The turning point came with the shutdown of Mozal, Africa's largest electrolytic aluminium smelter located near Maputo in Mozambique. The facility officially ceased production on 15 March 2026, after negotiations over electricity pricing and long-term supply between South32, the Mozambican government and Hidroeléctrica de Cahora Bassa (HCB) failed.

South32, which owns a 63.7 per cent stake in the 580 000-tons-per-year Mozal operation, said it could not secure confidence in obtaining adequate and affordable electricity beyond March 2026. The company subsequently placed the smelter on care and maintenance, ending 25 years of aluminium production at the site.

The closure did not just remove a major producer from the market – it exposed how fragile the underlying power system had become.

Mozal's electricity network had been vulnerable for years

Mozal's operations depended on an unusually complex electricity arrangement. Power generated at the Cahora Bassa hydropower facility in northern Mozambique is first exported through South Africa's Eskom network before being routed back into Mozambique through a transmission loop stretching nearly 1 400 kilometres.

The system was originally designed in the 1970s to prioritise electricity exports, and decades later there is still no direct transmission connection linking the Cahora Bassa dam to southern Mozambique, where the smelter operates.

That dependency mattered because Mozal requires roughly 950 megawatts of uninterrupted electricity to operate its two production lines, which together produce around 580 000 tons of aluminium annually.

The smelter itself was developed in phases. Phase 1, commissioned in 2000, used Aluminium Pechiney AP30S technology and had annual capacity of 253 000 tons. A second potline added in 2003 lifted total capacity to 506 000 tons before later operational improvements pushed output closer to 580 000 tons per year.

Climate disruption pushed the regional power system deeper into crisis

Mozambique's electricity crisis worsened further because of severe climate disruption across Southern Africa. The 2023–24 rainy season became one of the driest on record due to a strong El Niño event, sharply reducing rainfall across the Zambezi Basin that feeds the Cahora Bassa reservoir. Several regions received less than 20 per cent of normal precipitation levels.

Extreme heat, with temperatures running 1–2°C above average, accelerated evaporation and reduced water availability further. By mid-2024, the Cahora Bassa reservoir had fallen to around 44 per cent of capacity, well below the level required to maintain stable hydropower generation.

The impact of the power crisis and Mozal's shutdown became increasingly visible across Africa's aluminium market by February 2026. Regional production, which stood at around 134 000 tonnes in January, dropped sharply by nearly 12.7 per cent to around 117 000 tons in February as supply pressure intensified across the region.

Production later recovered partially by about 11.1 per cent to nearly 130 000 tons in March, but the disruption showed how quickly Africa's aluminium supply balance could weaken once a major producer went offline.

Although February has historically remained a softer production month for the region, the decline in 2026 was notably steeper. Output during February 2026 was also down around 4.9 per cent Y-o-Y compared with nearly 123 000 tons produced in February 2025, suggesting that the weakness was becoming increasingly structural rather than seasonal.

Imports rise as buyers race to secure aluminium supply

As regional production weakened, aluminium buyers increasingly turned to imports to stabilise supply chains and maintain aluminium availability.

Following the sharp February production decline, aluminium imports during the first two months of 2026 increased to 30 913 tons from 22 924 tons during the same period in 2025 with South Africa emerging as a major supplier.

The disruption at Mozal showed that even a single smelter shutdown can quickly reshape Africa's aluminium trade flows, production balance and regional supply stability. ■

Cape Town's Metal Theft Unit closes 136 non-compliant scrap traders

Increasingly drones are being used to record any suspicious activity

Cape Town has in excess of 600 scrap dealers and bucket shops – indicative of how lucrative the trade is. It is a mammoth undertaking for staff who have to inspect these premises on an ongoing basis AND act against incidents of cable and metal theft.

In the 10 months between July 2025 and April 2026, the Metal Theft Unit made 88 arrests, recovered more than a kilometre of stolen cable and more than 800 kilograms of stolen metal.

Staff completed 5 979 patrols in hotspot areas, 1 257 scrapyard compliance inspections, responded to 423 complaints from the public and issued 3 095 fines for various by-law transgressions.

In recent years, the unit, like many others in the City's Safety and Security Directorate, has started using technology like CCTV, drones and thermal imagery to amplify their operations and cover more ground, particularly in more rural landscapes.

"We are confident that the near 30% increase in hotspot patrols has prevented acts of criminality, protecting essential infrastructure in the process. But our staff monitor the entire pipeline, including keeping scrap dealers honest. Anyone found without proper registration or contravening any of the applicable legislation is closed upon inspection. It is a mammoth undertaking for staff who have to do inspections of these premises, proactively patrol known hotspots and respond to hundreds of public complaints," said Mayoral Committee Member for Safety and Security, Alderman JP Smith.

Scrap metal dealers are generally formal businesses, trading on a large scale in an area zoned for business. Bucket shops are registered dealers that tend to trade in suburbs from residential properties.

Since July 2025, the Metal Theft Unit has closed 42 scrap metal dealers and 94 bucket shops upon inspection. Reasons for closure include continued non-compliance with applicable legislation, where they are found guilty of an offence, or for failing to register as a second-hand goods dealer or metal recycler.

"Public assistance is critical in clamping down on the illegal trade in metals, so if you see something, please report it, no matter how big or small. In one of the most recent cases before court, there was a theft conviction for stealing a see saw from a park in Ravensmead. So, justice does come around in some cases," said Smith.

The person convicted of stealing the park furniture will be sentenced in the Goodwood Magistrate's Court. Another conviction awaiting sentencing in the same court relates to damage to, and/or possession of essential infrastructure (Prasa property).

In the Blue Down's Magistrate's Court, a suspect was convicted on 3 April for the possession of stolen property, and in terms of the Criminal Matters Amendment Act 18/2015. This was after he was found in possession of eight bags of Transnet cable weighing 409,15kg in Kraaifontein in 2023. He was sentenced to 15 years in prison.

The public can report suspected illegal scrap dealers or illicit activities via the City's Public Emergency Communication Centre on 021 480 7700.

Anonymous tips can be submitted via 0800 110 077. ■

Cable theft has been a major disruption and economical threat for a long time

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South Africa's ferrochrome smelters: The fight over Eskom's 62c/kWh tariff

The collapse in numbers: How South Africa lost its ferrochrome dominance. The resource paradox at the heart of South Africa's industrial decline.

According to a Discovery Alert report by Muflih Hidayat on 26 May 2026 few contradictions in global commodity markets are as striking as South Africa's position in the chrome industry. The country sits atop an estimated 80% of the world's economically viable chrome ore reserves, the foundational raw material for stainless steel production worldwide. Yet despite this extraordinary geological endowment, South Africa processes only a fraction of what it mines into finished ferrochrome. The value addition, the employment, and the export revenue that should logically flow from this resource dominance have, over the past two decades, migrated almost entirely to China.

This is not a story about depleted orebodies, logistical failure, or a lack of technical expertise. It is, at its core, a story about electricity pricing. And right now, a single proposed tariff rate – the Eskom ferrochrome smelter tariff 62c/kWh – is determining whether South Africa's remaining ferrochrome smelting capacity survives or follows its predecessors into permanent closure.

The scale of the market share erosion that has taken place over the past 25 years is difficult to overstate. In 2001, South Africa accounted for roughly 51% of global ferrochrome output. Today, that figure has contracted to approximately 10%. Over the same period, China's share expanded from around 5% to 65% of global production, despite China possessing negligible domestic chrome ore reserves of its own.

The mechanism driving this transfer is straightforward: Chinese smelters import chrome ore from South Africa and process it domestically using electricity priced far more favourably for industrial users than anything available to South African producers. The finished ferrochrome is then sold into global stainless steel supply chains at a cost structure South African smelters simply cannot match at prevailing Eskom tariff rates. Furthermore, ferroalloys in South Africa have long been considered critical to the country's industrial identity, making this decline all the more consequential.

A critical and often underappreciated detail within these figures is that much of the capacity shut down over this period is now considered permanently unrecoverable. Submerged arc furnaces that have been idle for extended periods cannot simply be restarted. Infrastructure deteriorates, skilled workforces disperse, and the capital required to recommission mothballed smelters frequently exceeds the economics of doing so.

Consequently, the industry's realistic production ceiling has been permanently compressed, even if tariff conditions were to improve dramatically overnight. Compounding this structural damage, Eskom's tariffs to ferrochrome smelters have increased by more than 500% since 2010. The standard industrial tariff currently exceeds 200 cents per kilowatt-hour, a rate at which South African smelter operations are commercially unviable.

The original negotiated pricing agreements held by Samancor Chrome and the Glencore-Merafe Chrome Venture were already significantly discounted at 136c/kWh, yet even this preferential rate proved insufficient to maintain competitiveness as ferrochrome prices softened and operational pressures intensified. Indeed, South Africa's mining decline has accelerated across multiple commodity sectors under similar pressures.

Why electricity is unlike any other production input

Understanding why the Eskom ferrochrome smelter tariff 62c/kWh debate matters so profoundly requires appreciating a technical reality specific to the smelting process. Electricity is not simply one cost among many in ferrochrome production. It constitutes approximately 52% of total production costs, making it the single largest operational variable by a wide margin.

Unlike labour costs, which can be partially managed through productivity improvements, or raw material costs, which track underlying commodity markets, electricity pricing in South Africa is a policy-controlled variable. This means the government and its regulatory architecture have both caused the problem and hold the primary lever to address it. The 62c/kWh proposal is, in essence, an attempt to use that lever before the remaining operating capacity crosses the threshold of no return.

Ferrochrome is produced by smelting chromite ore with a reductant, typically coke or coal, in submerged arc furnaces operating at extremely high temperatures

Ferrochrome is produced by smelting chromite ore with a reductant, typically coke or coal, in submerged arc furnaces operating at extremely high temperatures. These furnaces run continuously and consume enormous quantities of electricity. There is no energy-efficient alternative process commercially available at scale.

This technological constraint means that ferrochrome producers cannot simply invest their way out of a high electricity price environment the way a manufacturer might through automation or process redesign. The fundamental physics of smelting sets a floor on energy consumption. Moreover, commodity prices and mining performance are inextricably linked, and when input costs spiral, entire value chains become uncompetitive.

The Eskom 62c/kWh tariff: Structure, terms, and revenue protection

The proposed revised negotiated pricing agreement represents a further step down from the 87.74c/kWh interim hardship tariff that Nersa approved in January 2026 after Samancor Chrome and the Glencore-Merafe Chrome Venture invoked distress provisions within their existing contracts. That interim arrangement was itself already a concession from the 136c/kWh rate embedded in their original NPAs.

The proposed 62c/kWh structure differs importantly from a conventional tariff reduction. It is a commercially engineered agreement containing multiple mechanisms designed to protect Eskom's financial position.

The full article can be read at: https://discoveryalert.com.au/eskom-ferrochrome-smelter-tariff-south-africa-2026/ ■

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Fedgroup secures R500 million

IDC-backed renewable capital to accelerate industrial energy projects

Cleaner energy for steel. A key project within the portfolio is Coega Steels.

Fedgroup has secured funding for R500 million from the Industrial Development Corporation (IDC) for its newly established Fedgroup Renewables Capital Fund. The fund houses a portfolio of renewable energy and infrastructure-linked assets tied to major industrial and commercial companies including Coega Steels and Mondi.

The deal comes at a time when many South African industrial and infrastructure projects are struggling to access long-term funding for large-scale energy transition initiatives and reflects growing recognition of private capital models focused on income-generating infrastructure assets that support operational resilience and economic growth.

Fedgroup Chief Commercial Officer Rob Timmis says the IDC's decision to partner with Fedgroup was driven by the strength of the structure, the quality of the underlying assets and the calibre of the industrial counterparties involved. "Given that we were already committed to developing these projects independently, the IDC recognised that this was not a speculative investment approach, but a scalable long-term infrastructure platform built around proven demand and real industrial activity," says Timmis.

Coega Steels Pty Ltd. (formerly known as Agni Steels SA Pty Ltd.), is the first Steel Melting Unit to have been incorporated in the Industrial History of the Eastern Cape Province, Republic of South Africa. Coega Steels, as it is popularly known, is currently engaged in manufacturing of Mild Steel Billets, using ferrous scrap as raw material

The structure evolved from Fedgroup's original Green Energy Fund, which was initially funded internally before selected renewable projects were directed into a dedicated investment vehicle designed to attract institutional capital. Fedgroup acts as the primary financier and fund manager within the structure, while the IDC participates as a long-term co-funder through debt financing.

According to Timmis, the IDC's involvement adds significant credibility to the platform and strengthens Fedgroup's position within the renewable infrastructure financing market.

"The IDC plays a critical role in supporting industrial development and economic growth in South Africa, so its participation is a strong endorsement of both the quality of the underlying assets and the long-term viability of the platform. It also reinforces confidence in the structure among existing and prospective investors," he says.

Alternative asset acceleration

The deal comes against the backdrop of private credit emerging as one of the fastest-growing alternative asset classes globally as traditional lenders retreat from sectors requiring specialised structuring and long-term capital deployment. In South Africa, this funding gap is particularly evident across infrastructure, renewable energy and agriculture, where businesses often struggle to secure flexible funding despite operating in sectors critical to economic growth and industrial resilience.

According to Timmis, real assets such as renewable energy infrastructure, agricultural operations and industrial utility systems remain attractive because they generate predictable long-term cash flows, provide inflation protection and are less exposed to short-term market volatility while remaining aligned with structural growth themes including energy transition and food security.

"Our approach differs from traditional funding models by focusing on operational understanding of the underlying assets rather than relying purely on contractual risk transfer. We get into the operational detail, understand the assets and work closely with specialist technical partners over long-term periods. That reduces risk for the technical partner, improves value for the client and delivers stronger outcomes for investors," he says.

Cleaner energy for steel

A key project within the portfolio is Coega Steels, a steel billet manufacturer operating within the Coega Industrial Development Zone (IDZ) outside Gqeberha in the Eastern Cape. The area is one of South Africa's most strategically important industrial and export-focused manufacturing hubs, where energy reliability and infrastructure resilience are critical to long-term competitiveness.

Fedgroup's renewable funding initiatives linked to the operation are aimed at supporting large-scale energy transition projects within one of the country's traditionally energy-intensive industrial sectors. The renewable infrastructure includes a 7.1 MWp solar PV installation financed by Fedgroup Private Capital through a R51.8 million funding structure.

The project combines rooftop and ground-mounted solar installations across the Coega Steels site and is expected to generate approximately 9.3 GWh of electricity in its first year of operation.

The installation includes rooftop and ground-mounted components using more than 11 000 solar panels across the site and is expected to deliver first-year electricity savings of approximately R19 million while reducing reliance on grid electricity.

"Overall, projects like this are strategically important because they sit within sectors central to South Africa's industrial economy. When you combine strong counterparties with long-term infrastructure demand and renewable energy transition opportunities, it creates a compelling investment case," concludes Timmis. ■

Aurelio Grech-Cumbo named Italian Business Person of the Year

The Italian-South African Chamber of Trade and Industries (ItalCham) hosted its prestigious 2026 Business Excellence Awards on Friday, 15 May 2026, at the @Sandton Hotel in Johannesburg. The elegant black-and-white gala celebrated leaders strengthening bilateral trade, innovation, and economic collaboration between Italy and South Africa.

The evening's highest honour was awarded to Aurelio Grech-Cumbo, the visionary leader behind RGC Engineering, recognised for his exceptional leadership, strategic vision, and ongoing commitment to bridging Italian technological excellence with South African industrial capability.

RGC Engineering: Transforming the manufacturing landscape

Under Aurelio's leadership, RGC Engineering has evolved into an industrial trailblazer, contributing significantly to the growth and advancement of the manufacturing sector through key projects and national initiatives.

One of the company's latest flagship developments is a state-of-the-art metrology and training facility in Johannesburg, aimed at strengthening precision engineering capabilities and supporting the future development of South Africa's manufacturing workforce. Under his guidance, the company has evolved into a respected provider of advanced metrology and precision engineering solutions, working alongside global industry leaders and maintaining the highest standards through ISO 9001 certification and SANAS accreditation.

Strengthening South Africa's manufacturing future

As the elected Group Treasurer of Production Technologies Association of South Africa, Aurelio also actively champions the local tool, die and mould (TDM) industry.

He additionally plays a vital role in the INTSIMBI National Tooling Initiative – a joint programme between PtSA and the Department of Trade, Industry and Competition (the dtic) – focused on revitalising and strengthening South Africa's tooling and advanced manufacturing capabilities through strategic industry development, skills advancement, and industry collaboration.

Aurelio's recognition at the ItalCham Business Excellence Awards highlights the important role industry leaders play in driving innovation, investment, and international partnerships within South Africa's manufacturing sector.

His work continues to demonstrate how collaboration between global expertise and local industry capability can create meaningful opportunities for growth, technology transfer, and long-term industrial sustainability. The award not only celebrates personal achievement, but also reflects the growing strength and potential of South Africa's engineering and manufacturing industries on the global stage.

Contact RGC Engineering on TEL: 011 887 0800 or alternatively visit www.rgcengineering.co.za for further details. ■

HA Group strengthens its presence in Asia with new plant in South Korea

The HA Group has officially opened a new production plant for coatings in Miryang, South Korea, underlining the strategic importance of the Korean and broader Asian market for the company. The investment marks a significant milestone in HA Group's long-term growth strategy and reinforces its commitment to the global foundry industry.

Despite a challenging global economic environment, the HA Group continues to invest decisively in key foundry markets worldwide. With this latest expansion, the company aims to further consolidate its leading market position while creating long-term value for customers and partners across the globe.

In addition to its existing plant in Siheung, the new facility significantly enhances HA Group's ability to serve customers in the region. It enables the company to respond more effectively to growing demand and to deliver tailor-made, innovative solutions for the foundry industry. By strengthening local production capabilities, HA Group is consistently pursuing its strategy of producing close to customers and responding flexibly to regional market requirements.

The new plant also creates additional flexibility at the HA facility in Siheung, particularly for the resin business. This optimised setup supports a more efficient and balanced production network across the region, further improving supply reliability and operational efficiency.

Equipped with state-of-the-art coating technology, the new facility incorporates numerous advanced safety features. These measures reflect HA Group's strong commitment to employee protection and its responsibility toward the surrounding community.

"The opening of our new plant in Korea is a key milestone in the global growth strategy of the HA Group," said Siamak Djafarian, President of the HA Group. "Asia, and South Korea in particular, is a strategically important market for us. Even in a challenging economic environment, we continue to invest deliberately in our foundry business to strengthen our leadership position and to support our customers worldwide with innovative, high-quality solutions."

Bae Gee-Ho, CEO of HA Korea, emphasised the regional importance of the investment: "We firmly believe that the products manufactured at the Miryang plant will contribute significantly to the development of Korea's basic industries. The new production facility will be a cornerstone for the further growth of HA Korea and will make a meaningful contribution to the economic vitality of the Miryang region as well as to the industrial development of South Korea as a whole."

Contact DZanetech for Johannesburg on 082 809 7380 (Paul Malone) or Cape Town on 083 454 5465 (Johan Jooste) or for National 066 010 0999 (Zaid Syed) or Technical Support on 083 274 1657 (Koketso Mamogale) or visit www.dzanetech.co.za for further details. ■

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Seres and Boao Mei Aluminium launch world's first mass-produced semi-solid magnesium alloy cockpit cross beam, ushering in a new era of light-weighting for the Seres AITO M6 SUV

Chinese automotive manufacturer Seres and Boao Mei Aluminium (Baowu) have successfully launched the world's first mass-produced semi-solid process magnesium alloy body component. The newly manufactured CCB (cockpit cross beam) fills a critical industry gap and marks a significant step forward in extreme light-weighting for new energy vehicles.

Magnesium alloy semi-solid forming technology has long been seen as the ultimate goal of light-weighting, delivering substantial weight reduction without sacrificing mechanical performance. However, the technology has faced major barriers: high capital investment, extreme process complexity, and a lack of proven mass-production precedents. To overcome these challenges, Seres and Boao Mei Aluminium formed a dedicated task force, running extensive trials covering material formulation, process optimisation, production line layout and batch stability control. Using the HMG3600 large-scale magnesium alloy injection moulding machine developed by Haitian Intelligent Metal, the team adopted semi-solid injection technology to eliminate shrinkage and porosity defects while achieving grain refinement and uniform microstructural distribution.

A dedicated semi-solid magnesium alloy production line has now been established that has reached a capacity of 1 000 units per day, it is claimed. It is said that during trial production Boao Mei Aluminium stated that the CCB weighed 3.8kg with a shot weight of 6.1kg and length of 1.4 metres.

The new semi-solid magnesium alloy CCB delivers significant weight reduction compared to conventional steel or aluminium structures. Based on comparable production data, a single unit typically weighs between four and five kilograms, achieving over 50 per cent weight reduction versus traditional steel components. Tensile strength is improved by 10 to 20 per cent relative to conventional processes, while fatigue resistance and corrosion performance are also significantly enhanced, meeting the high rigidity and safety standards required for structural body applications.

As competition in the NEV sector extends into materials science, light-weighting has become a core imperative for energy efficiency and range performance. The newly manufactured CCB (cockpit cross beam) fills a critical industry gap and marks a significant step forward in extreme light-weighting for new energy vehicles

Seres has officially incorporated the semi-solid magnesium alloy CCB into the upgrade plan for its AITO model family. Beyond the weight reduction of this specific component, Seres has already achieved 20 kilograms of magnesium alloy content per AITO vehicle, and its one-piece die-cast magnesium alloy rear body structure consolidates 87 separate parts into a single component. With this latest breakthrough, Seres has now extended its light-weighting efforts from peripheral structures to core load-bearing components.

As competition in the NEV sector extends into materials science, light-weighting has become a core imperative for energy efficiency and range performance. With this mass-production milestone, Seres has not only strengthened its own product competitiveness but also provided a scalable industrial blueprint for the industry's transition to magnesium alloy components. Looking ahead, Seres says it will continue to deepen strategic partnerships across its supply chain, expanding applications for semi-solid magnesium alloy technology across body, chassis and drivetrain systems. ■

The world's first mass-produced semi-solid process magnesium alloy body component was produced on the HMG3600 large-scale magnesium alloy injection moulding machine

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Simpson's vision for the future: Innovation, sustainability and growth

Norican Group company Simpson's Senior Vice President John Jennings says: "Simpson is entering a new era of transformation – one focused on advancing innovation, sustainability, and global growth."

With decades of industrial leadership and a dedication to customer partnerships, Jennings is helping chart that course. He brings the experience and vision to guide Simpson into its next century of excellence.

Building on a legacy of innovation

"For more than a century, Simpson has built its reputation on engineering excellence and customer partnership. We are expanding that legacy with a renewed focus on digital transformation, smarter process control, and sustainable foundry solutions."

"Innovation has always been at the heart of Simpson. Our goal is to continue developing technologies that make foundries more efficient, more connected, and more environmentally responsible. This vision builds on Simpson's strengths – proven equipment, deep industry knowledge, and a global network of customers and partners – while driving toward the future."

Driving sustainable foundry practices

"Sustainability is no longer optional; it's essential to modern manufacturing. Simpson is leading the charge with technologies like the Simpson Pro-Claim® sand reclamation system, which helps foundries reclaim sand, reduce waste, and lower disposal costs, while maintaining sand quality."

"By integrating systems like the Simpson Multi-Cooler®, Hartley® control systems, and Monitizer® IIoT platform, Simpson empowers foundries to track, measure, and optimise performance in real time – delivering both environmental and economic value."

"Sustainability and productivity go hand in hand. When we help our customers use fewer resources and reduce waste, we're not only protecting the planet, we are improving their bottom line."

Expanding global growth

"Simpson's vision also includes strategic global growth, continuing to strengthen collaboration across our teams in North America, Europe, India, and Asia. With expanded manufacturing and service capabilities, Simpson is positioned to deliver localised support and faster response times for customers around the world."

"Our growth strategy is built around being closer to our customers," Jennings says. "That means listening carefully, responding quickly, and investing in the people and technologies that help them succeed."

A shared vision for the future

"Simpson is building on its long tradition of excellence with a renewed focus on progress. By aligning innovation, sustainability, and growth, Simpson is not just adapting to change – we're driving it, helping foundries around the world operate more efficiently and build a stronger, more sustainable future," said Jennings.

For further information contact Peter Petersen of Mondeco Solutions on 079 448 1277 or email peter@mondeco.co.za or visit www.mondeco.co.za. For more on Simpson and Norican, visit www.simpsongroup.com ■

Norican Group company Simpson's Senior Vice President John Jennings says: "Simpson is entering a new era of transformation – one focused on advancing innovation, sustainability, and global growth."

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Ford and Sharrow Engineering cut propeller production time from months to weeks with 3D printed sand-casting

Collaboration has replaced 130-day investment casting process with a 3D printed sand-casting workflow, reducing production lead times to approximately two weeks.

Ford Motor Company's Advanced Industrial Technology & Platforms (ATP) team and Sharrow Engineering's partnership has led to significant cuts in lead time on a propeller being produced by the companies.

Michigan Central, Detroit's mobility innovation hub, brokered the introduction between Ford and Sharrow, maker of the patented Sharrow Propeller. Over the course of nine months, the two companies have worked to adapt Sharrow's propeller designs to a 3D printed sand-casting process, refining and validating the approach for high-volume output.

Ford and Sharrow have worked to adapt Sharrow's propeller designs to a 3D printed sand-casting process, refining and validating the approach for high-volume output

Ford developed and refined the mould manufacturing process in coordination with regional foundries, as it combined its advanced manufacturing expertise with the foundries' metallurgical and pouring experience.

The Sharrow Propeller was first introduced in 2020, and has since experienced growing demand from recreational boaters, commercial operators, and government agencies. Production throughput had become the company's primary constraint, however, as that growth developed.

"Since we introduced the Sharrow Propeller, the market response has been extraordinary, but scaling production has been our biggest challenge, particularly getting high-quality castings fast enough to meet demand," said Greg Sharrow, Founder and CEO of Sharrow Engineering and Sharrow Marine.

"That's one of the reasons we came to Detroit – to tap into a level of manufacturing capability and ecosystem we couldn't find anywhere else, including the network at Michigan Central. This collaboration with Ford Motor Company has solved that problem for us in a big way. What used to take an entire boating season to produce can now be made in just a few weeks. That's game-changing."

"It's a powerful example of what can happen when companies like Ford help bring breakthrough technologies to industrial scale."

Dan Michalski additive manufacturing operations supervisor at Ford with the final product

Ford's solid, longstanding sand-casting foundation

Ford's involvement drew on more than two decades of experience in 3D sand-casting.

"Ford has been at the leading edge of 3D sand-casting for more than 20 years, and it's rewarding to use that expertise to help another Michigan company scale so quickly. This is about more than just propellers – it's about making industrial innovation available to customers like Sharrow so they can compete on a global stage," stated Dan Michalski, Additive Manufacturing Operations Supervisor at Ford.

Michigan Central Acting CEO Carolina Pluszczynski described the collaboration as a direct expression of the hub's purpose. "Michigan Central was built to bring together the people, infrastructure, and expertise needed to help companies move from breakthrough ideas to real-world scale. Sharrow is exactly the kind of company we're here to support – an innovator with proven technology and growing demand."

"It is incredible to see how Sharrow has scaled since joining our ecosystem. They have leveraged the prototyping labs here, found talent to grow their team, and expanded their footprint. And now, by connecting them with the Ford advanced manufacturing team, Sharrow has drastically accelerated its production processes, turning innovation into tangible impact."

Expansion beyond marine applications

The production gains coincide with Sharrow's fourth facility expansion in five years. The company now operates from a 60 000-square-foot site in Harper Woods, Michigan, and has indicated that the core propeller technology has applications beyond marine propulsion. These include drones, advanced air mobility, industrial fans, pumps, and renewable energy systems. ■

GIFA, METEC, THERMPROCESS and NEWCAST 2027

World-leading trade fair quartet welcomes the international foundry and metallurgical industries to Düsseldorf, Germany again in 2027.

The new dates for the GIFA, METEC, THERMPROCESS and NEWCAST trade fairs have been set. The leading international trade fairs of the industry will present themselves at the Düsseldorf Exhibition Centre from 21 to 25 June 2027. Commenting on this, Malte Seifert, Director of GIFA, METEC, THERMPROCESS and NEWCAST at Messe Düsseldorf GmbH, says: "We are delighted to have found dates in early summer that have already proven their worth in the past. The Bright World of Metals is and will remain the absolute highlight for the metallurgy and foundry sectors worldwide."

The five-day duration of the fair with its tried-and-tested weekday schedule will remain unchanged. "The trade fair dates were chosen in close consultation with our association and conference partners and will also allow us in 2027 to organise the most relevant marketplace for the international foundry and metallurgy industries with many visitors from all over the world," adds Malte Seifert.

Until the next edition of GIFA, METEC, THERMPROCESS and NEWCAST, there will be continuous reports on industry trends and market developments on the respective trade fair portals as well as on LinkedIn and Facebook. In addition, as part of the ecoMetals initiative, the constant developments of the companies around the topics of sustainability, energy and resource efficiency, decarbonisation as well as circular economy in the foundry and metal industry will also be highlighted in the interim years.

The Bright World of Metals comprising the trade fairs GIFA (16th International Foundry Trade Fair with Technical Forum), METEC (12th International Metallurgy Trade Fair with Congresses), THERMPROCESS (14th International Trade Fair and Symposium for Thermoprocess Technology), and NEWCAST (7th International Trade Fair for Castings with NEWCAST Forum) is considered the pioneering platform for trends and technological innovations in the metallurgy and foundry technology sectors the world over. Registering 2 188 exhibitors and 63 262 visitors from 116 countries the trade fair quartet consolidated its position as the global market leader in this important sector of industry in 2023. Especially the hot topics ecoMetals, circular economy and Artificial Intelligence met with great interest among trade visitors. Likewise, the themes of lightweight construction and innovative manufacturing technologies played a prominent role, as highlighted not least during the ecoMetals-Trails.

The Bright World of Metals offers the almost complete world range in the areas of foundry and melting plants, refractory technology, plants and machinery for mould and core production, moulding materials and moulding supplies, model and mould making, control technology and automation, environmental protection and waste disposal as well as information technologies.

For more information please visit:
https://www.gifa.com, https://www.newcast.com,
https://www.metec-tradefair.com/metec,
https://www.thermprocess-online.com ■

ABP CEO Till Schreiter calls for greater consistency, innovation and strategic courage from industry and companies

ABP CEO Till Schreiter

"The time to act is now. The metallurgical plant engineering sector is characterised by a challenging economic environment, geopolitical upheavals, and growing uncertainties. One thing is clear: The challenges are not new – but they have been underestimated for far too long," said ABP CEO Till Schreiter in a recent interview.

Schreiter points out structural deficits in Europe while at the same time highlighting where the decisive levers for competitiveness and growth lie.

> "The European single market is no longer functioning smoothly on its own. We must actively strengthen it. We must be honest and admit to ourselves: The world has changed faster than many wanted to acknowledge."

ABP's fiscal year is coming to a close amid challenging conditions

"The reality is this. The framework conditions have not improved, on the contrary. We are seeing rising insolvencies, increasing unemployment, and massive uncertainty across the industry. And it is precisely this uncertainty that is the greatest poison for the economy. Companies simply no longer know where the journey is heading. And if that clarity is lacking, investments won't be made. We are now feeling the impact across the entire industry."

"Europe is getting bogged down in bureaucracy, excessive regulation, and political constraints instead of addressing the major strategic issues. We've been talking about cutting red tape for years – but nothing has actually happened. The burden has actually grown. At the same time, there is no clear industrial policy. Companies need orientation, not additional hurdles."

What does this mean specifically for mechanical and plant engineering?

"We are in the midst of a structural shift. China was long our most important market. Today China is building on its own. The United States is pursuing an increasingly protectionist policy. And India cannot close this gap. That means Europe must finally refocus on itself. The European single market is no longer functioning smoothly on its own. We must actively strengthen it."

Europe must redefine its industrial policy course

"We must be honest and admit to ourselves: The world has changed faster than many wanted to acknowledge. Europe often tries to artificially prop up existing structures instead of asking itself: Where can we truly take the lead? Where do we have a real technological advantage? That takes courage. The courage to break with old traditions and courage to focus on new stages of value creation."

How does ABP assess the current situation of decarbonisation

"Decarbonisation is important but it must not become an end in itself. The hard truth is nobody decarbonises without economic benefits. If you invest too early without staying competitive, you'll be out of business. That means we need solutions that cut CO2 and at the same time make economic sense. Retrofit, hybrid systems, electrification, these are concrete approaches that can work."

Where do you currently see the greatest opportunities for industry?

"Clearly in innovation and digitalisation. That is the decisive lever. We need to ask ourselves: How do we make our customers more productive, more efficient, and more profitable? If we achieve that, then our solutions will be in demand – regardless of the market. Digitalisation and AI are not an option, but a duty. Anyone who doesn't invest here will fall behind."

What specific role does artificial intelligence play here?

"AI is a gamechanger. It enables us to make processes faster, better, and more efficient. And it helps us solve structural problems – from the shortage of skilled workers ▸

to boosting productivity. Countries like China are investing heavily in these technologies. There's a reason for that. That is why I want to make it very clear. Every company must give this serious consideration. There are no more excuses."

What specific advice do you have for companies?

"Firstly internationalisation. With a purely local setup, you will no longer be able to survive in the future. Secondly build flexibility in supply chains, production, and markets. And thirdly, and this is the most important point – consistently focus on innovation. That is the only sustainable way to survive in this environment."

You have also critically examined Europe's role in global competition. Where do you see the greatest risks?

"The biggest risk is stagnation. Europe is in danger of being crushed between the major power blocks because we are acting too slowly and too hesitantly. If we don't start consistently leveraging our strengths, which are technology, expertise, and quality, others will take over the markets."

And where do you see the greatest opportunity?

"In our own strength. Europe has a vast industrial base, excellent expertise and a strong capacity for innovation. But we also need to make the most of these strengths. This means cutting red tape, promoting innovation, strengthening international partnerships and above all taking action."

Finally what is your key message?

"The clock is ticking. We must stop deluding ourselves. The overall situation is not likely to improve in the short term. That is why we must take action ourselves as companies, as an industry, and as Europe. We need to roll up our sleeves, make decisions, and implement them consistently. This is the only way we will remain competitive in the future."

For details contact ABP Induction on TEL: 011 623 1814/17 or cell 072 158 1117 or email byron.mccall@abpinduction.com. You can also visit www.abpinduction.com ■

Gulf aluminium output collapses by 40% of pre-war levels as global supply crisis deepens

April figures show production down 26.7% in a single month, as IAI warns the worst is still ahead.

Preliminary production data from the Gulf region shows aluminium output fell to 10 989 tons per day in April 2026, a 26.7% decline from the March figure of 15 000 tons per day and less than two-thirds of the pre-conflict baseline of approximately 17 800 tons per day. Final April figures are still being compiled.

The numbers, collated by the International Aluminium Institute (IAI), confirm the level of disruption to Gulf production. The region accounts for around 8% of global primary aluminium output but supplies approximately 19% of EU primary aluminium imports, 28% of Japanese primary aluminium imports and 21% of US primary aluminium imports, making the supply shock far larger than its production share alone suggests.

Speaking in the days following the recent CRU World Aluminium Summit in London, where the Gulf crisis dominated discussions among industry leaders from 39 countries, IAI Secretary General Jonathan Grant said: “What we are seeing in April’s numbers is probably not the floor, it is a further deterioration that brings Gulf output to levels not seen in over a decade. The region’s smelters cannot replenish raw material stocks through the Strait of Hormuz and are trying alternate land routes to keep operating. That equation is now catching up with production in a very direct way. Aluminium is essential to modern industrial economies and with countries including the US, Japan and EU relying on Gulf smelters, this appears to be a slow-motion supply chain shock.”

A supply shock that reaches every major economy

In 2025, Gulf producers exported 860 500 metric tons of primary aluminium to the United States alone. The EU received the equivalent of nearly one in five tonnes of its primary aluminium imports from the same five GCC producers. Japan, South Korea, Thailand and Turkey are also substantially exposed. That metal feeds directly into automotive manufacturing, aerospace, construction, packaging and electrical infrastructure, the foundational supply chains of modern industrial economies.

With the Strait of Hormuz effectively closed to commercial shipping, finished metal that has already been produced is largely stranded at smelters, unable to reach customers. Emirates Global Aluminium, the region’s largest producer, has confirmed export delays and warned it may draw on inventories held outside the region to meet contractual demand.

LME price at a four-year high – and rising pressure ahead

The LME aluminium price has reached a four-year high as markets react to the tightening supply picture.

US Midwest aluminium premiums, already the highest in the world – have surged further since the conflict began. European duty-unpaid premiums have followed.

With Gulf production now running at roughly 38% below its pre-war daily rate, and global output showing no material compensating increases in other regions, the structural supply deficit is set to widen. China, which accounts for approximately 60% of global production, has shown only marginal increases in output. No other producing region is positioned to absorb a disruption of this scale at speed. ■

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Mitutoyo's compact vision measuring machine is aimed at replacing profile projectors

Mitutoyo's QM Fit is a compact manual vision measuring machine designed for quick and accurate inspection of small and thin parts. Mitutoyo positions it as a practical successor to the profile projector, a mainstay of shop floor measurement for decades.

At the heart of the system is a touch first interface with automatic part recognition. Operators place a workpiece on the stage and initiate measurement without manual focusing or alignment. The software identifies common features such as circles, lines, and edges, then presents results as clear graphics with immediate pass or fail indicators.

A feature called Graphically Supported Calliper Snap lets users drop digital rulers onto edges or geometries, removing the familiar ritual of aligning crosshairs on a projector screen. The unit's imaging stack includes a 20-megapixel colour sensor, digital zoom to one hundred times, a telecentric lens, and a generous 36mm depth of field, which together support crisp measurements even when surfaces are not perfectly coplanar. Mitutoyo states accuracy is calibrated to plus or minus ten micrometers with repeatability within two sigma less than or equal to four micrometers, and the software records data for audit trails

and environmental correction.

The launch of the QM Fit arrived amid a broader shift from optical comparators also known as profile projectors to vision measuring machines that automate alignment, feature detection, and data capture. Traditional comparators remain valued for noncontact measurement and their simplicity, but their outcomes often depend on operator skill, careful focusing, and manual alignment to overlays or charts. Industry guides increasingly note that comparators can be subject to human variation and can create bottlenecks when inspection volume rises or when complex part geometries are involved. Vision systems reduce that variability by detecting edges and features through software and by logging results automatically, which is why many manufacturers now evaluate them as replacements or complements to their projector fleets.

Optics are central to measurement accuracy, and the inclusion of a telecentric lens in the QM Fit is notable. Telecentric lenses keep magnification constant as the object moves within a defined range, which reduces perspective error and helps maintain dimensional accuracy across parts that are not perfectly flat. Tutorials from optics suppliers explain that the main advantage is consistent size reproduction with respect to depth, which is valuable for gauging edges and hole diameters. Depth of field also matters. A larger f number generally increases depth of field, though diffraction imposes limits at extremes, so designers balance aperture, sensor size, and illumination to maintain contrast and resolution. These fundamentals explain why even a compact bench unit that combines telecentric optics with a high resolution sensor and controlled lighting can deliver repeatable results on small features.

Contact RGC Engineering on TEL: 011 887 0800 or alternatively visit www.rgcengineering.co.za for more details. ■

Metkon's Servocut 402
metallographic automatic abrasive cutting machine

Servocut 402 is an advanced universal metallographic cutting machine with high cutting capacity that is used to cut a very wide range of materials. It offers the advantages of combining different cutting techniques and methods into the same machine to obtain superior cutting surfaces for a broad range of heavy-duty cutting applications. Automatic cutting guarantees the highest level of reproducibility through the automatic processing of the specimen.

Servocut 402 has a robust and reliable design with low noise and emission levels. The modern and sturdy design with powerful 7.5kW cutting motor ensures fast and efficient cutting through the hardest and most complex materials with precise motor driven axis controls.

Control of XYZ axis can also be performed with the ergonomic proportional Joystick that offers smooth and precise positioning. Servocut 402 automatic models have advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and minimise operator intervention.

Servocut 402 consists of a cast aluminium base on which the motor and the working space are provided in the form of two separate housings. A large window of Lexan and a sealed LED lamp in the cutting chamber allow precise observation of the cutting process at an optimum degree of safety. A large, T-slotted feed table located in the cutter's generous work area can accommodate a variety of different clamping devices which need to be selected.

High cutting capacity

A large cutting table (550mm by 483 mm) allows clamping of very large samples. A sliding door and side openings allow for easy access and handling.

The 7" coloured HMI touch screen and user-friendly software allows easy view and control of all steps. It includes up to 99 different cutting programmes can be saved.

The advanced cutting methods rapid pulse cutting, instafeed and table oscillation cutting are offered as standard. The belt protection system enables the cutting motor to immediately stop if the cut-off wheel sticks during the cutting operation.

Servocut 402 is the perfect choice for a broad range of heavy-duty cutting applications. It is available in three main sizes and in automatic and/or manual version.

Servocut 402 has a robust and reliable design with low noise and emission levels. It is used from small to large international companies and laboratories in many different industries, including automotive, aerospace, bearings, foundries, steelworks, electronics, universities and institutes.

Contact SPS – Scientific & Precision Solutions on TEL: 011 916 5000 or email info@spsrsa.co.za or visit website www.spsrsa.co.za for more information. ■

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Why Extending Your Brand Online Matters

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Online research is a key part of the industrial buying cycle, particularly during the consideration and selection stages. castings sa online is where buyers search, research and learn about new product technology and new process innovations. Aligning your message with the areas where prospects are likely to look for technical solutions is the essence of contextual advertising and brand development.

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