SI Group unveils global brand transformation
New logo aligns with dynamic corporate strategy

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

**Membership Fees for 2015**

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Annual Fee</th>
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<tbody>
<tr>
<td>Junior Member</td>
<td>R100.00</td>
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<tr>
<td>Individual Member</td>
<td>R700.00</td>
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<tr>
<td>Company Member - less than 150 employees</td>
<td>R3 000.00</td>
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<tr>
<td>Company Member - more than 150 employees</td>
<td>R6 000.00</td>
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<td>R330.00</td>
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<tr>
<td>International Member</td>
<td>R2 000.00</td>
</tr>
<tr>
<td>Company Member - more than 150 employees</td>
<td>R3 000.00</td>
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</tbody>
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All prices include VAT

**Council Appointments for 2014/2015**

- **President** - Takalani Madzivhandila
- **Vice President** - Janley Kotze
- **Treasurer** - Justin de Beer

**Constitutional Members**

- **Immediate Past President** - Enno Krueger

**Elected Members**

- Andrew McFarlane
- David Mertens
- Bruce Crawford
- John Davies
- Kevin van Niekerk
- Nigel Pardoe
- Adrie El Mohamadi
- Colin Smit
- Cyprian Kyalu
- Dalmari McQueen
- Joshua van Flyman

**Western Cape**

- **President** - Mike Killain
- **Financial & Technical Speakers** - Dean Horne & Sean Stadler
- **Administration** - Kevin Missenheimer
- **Social Co-ordinator & Technical Speakers** - Mike Killain

**Address Details**

- **University of Johannesburg**
  - Metal Casting Technology Station - Metallurgy
  - Room G101, John Orr Building, Corner Siemert and Beit Street, Doornfontein, Johannesburg, Gauteng.
- **Postal Address:** P.O. Box 14863, Wadeville, 1422.
- **John Davies** - Tel: +27 (11) 559 6468; Cell: 083 630 2809; email: jdavies@uj.ac.za
- **Executive Secretary** - Tel: +27 (11) 559 6455; Fax: +27 (11) 559 6526; email: mbiljon@uj.ac.za
- **Website:** www.foundries.org.za

**Contact details for Western Cape:**

- **Mike Killian** - Cell: 082 442 3785

**EDITOR’S COMMENT**

**It is all about creating a passion for the industry**

A peer in the industry referred to GIFA 2015 as the playground for those in the metalcasting industry, where a mall of the technology and services is presented and attendees can shop ‘til they drop to outfit their casting facility with the latest and greatest equipment and materials. This certainly was the case at GIFA 2015 and I must compliment the exhibitors as their stand displays stood head and shoulders above the previous five GIFAs I had attended.

More importantly the organisers Messe Düsseldorf must be praised for continuing to enhance the experience while promoting the future of the industry. This included a large exhibition space dedicated to “Metals4you”, an area where the future engineers, apprentices and foundrymen – the next generation – could immerse themselves in all aspects of foundry practice with the emphasis on recruiting young people into the industry. Students could feel, touch and experience first hand the importance of sand to the industry, for example, as well as live casting demonstrations.

Leading German industry associations, universities and technical institutions, as well as those from around the world were also afforded exhibition space so students could literally ‘sign up’ with their preferred tertiary education institution.

A special programme was developed for visits by students over the age of 15 who are currently planning their future careers. With the help of innovative computer-based technologies such as 3D printing, students were given an interesting demonstration of how clean operations are and how high-tech the foundry industry is nowadays.

Exhibiting companies were encouraged to embrace the “Metals4you” theme to assist in their search for apprentices or budding engineers. A number of companies took up the opportunity and presented their latest technical developments in dedicated portions on their stands, while also providing information about training opportunities at the same time. As a result, young people had the chance to get to know both the companies themselves and their technical know-how.

Education of the future generation and training in-house staff, while imparting information on products and services offered by the industry, is key to developing general society’s understanding of the foundry industry and must be part of our future as it is one of the most effective tools. Education of your customer - buyers and designers of castings - is equally important.

South Africa lags far behind the rest of the world on these aspects when it comes to our business to business and industry related exhibitions. Far too much money is wasted on ‘international’ conferences for the converted that run in conjunction with the exhibition and, the so called networking parties where attendees are only interested in what they can get for free and adding extra weight to their already unhealthy bodies.

I therefore challenge not only the exhibition organisers, but also the associated industry associations/institutes, coupled with government sponsorship, to ensure that exhibition space is allocated to developing the industry’s future and not to just look inward with an eye to maximising the bottom line.

It is all about creating a passion for the industry.
Your performance relies on our solutions

... from high quality equipment to dependable consumables, raw materials and spares for the aluminium, steel, foundry and refractory industries

For over 10 years we have been supplying the South African molten metal industry with a range of Ferro alloys, cored wire, aluminium alloying additions, ceramic castings and filters, minor and special metals and minerals.

These include master alloys and alloys, fluxes, coatings, insulation materials (boards, blankets, wool, cloth, bricks and other textiles), filters, inoculants and nodulisers, hollowware, tin, mercury, linings, ceramic pre-cast shapes, crucibles, slide gate systems, filtration and degasser systems, furnaces, core shooting machines, moulding plants and systems, metal treatment and automation systems.

Our international affiliation includes:

- ICP (Industrial Ceramic Products): ceramic gating components
- Selee Corporation: filters for metal filtration
- HOESCH: grain refiners, master alloy's
- Schaefer: non-ferrous die coats, fluxes
- Striko: aluminium furnaces
- Foundry Automation: core shooting machines
- IMF: turnkey moulding plants and systems
- Mammut: crucibles
- Progetta: molten metal treatment and automation systems for grey and ductile iron foundries
- Kennecott: FeMo
- Elkem: inoculants and nodulisers
- Ceralcast: local ceramic production facility
- CEDIE: cored wire
- RATH: refractory materials

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SI Group is undergoing a global brand transformation, including the launch of a new logo

“T”his new logo is more closely aligned to our dynamic, forward-thinking corporate strategy.

We will continue to be the same valued business partner, providing innovative chemistry and solutions that allow our customers products to be made safer, more efficient, and more durable,” said a company spokesperson.

“We acknowledge our history by retaining our tagline, The Substance Inside — a reminder of the industry we are in and the essential part that chemistry plays in countless products and processes.”

“Our new “what we do” statement: At SI Group, we create smart chemistry that solves global challenges and makes great things possible. Our innovations improve the performance and durability of aerospace, transportation, health and wellness, consumer goods, personal safety, food, beverage, home goods, construction and industrial products around the world.”

SI Group is a global developer and manufacturer of chemical intermediates, specialty resins and solutions that are critical to the quality and performance of countless industrial and consumer goods.

They have a local presence in 10 countries, more than 2,700 employees, and customers in more than 90 countries.
The SI Group focus is on ten key market segments — rubber resins, antioxidants, fuels and lubricants, plastic additives, industrial resins, health and wellness, adhesive resins, surfactants, engineering plastics and pharma and specialty.

Eleven years ago Schenectady International, Inc. (now known as the SI Group), through its South African affiliate, Schenectady South Africa (Pty) Ltd reached an agreement to partner in South Africa with Hüttenes-Albertus Chemische Werke GmbH (HA) by acquiring Hüttenes Albertus Falchem (Pty) Ltd ("HAF") and Zeta Resin (Pty) Ltd's ("Zeta") foundry and timber chemical intermediates business.

In 2010, in order to streamline operations in South Africa and make the group more cost effective, it was decided to flatten this structure and incorporate HA Falchem SA (Pty) Ltd into the SI Group, and SI Group South Africa (Pty) Ltd was formed.

Innovations on display at GIFA 2015
Special innovations, such as the new cylinder liners with a "hedgehog" structure, Telefeeder technology for aluminium sand casting and a penetration coating to prevent white film defects, were displayed on the Hüttenes-Albertus stand and presented in more detail at the GIFA 2015 Forum and WFO Forum.

The new core production process for ferrous and non-ferrous casting
In the past productivity and dimensional requirements were the major priority for researchers in the foundry industry. Nowadays, the focus lies on environmental protection and the application of sustainable, environment- and resource-conserving binder technologies.

By means of intensive research Hüttenes-Albertus successfully developed an entirely new core production process for ferrous- and non-ferrous casting. Cleantech is an innovative process for foundry core production. Using a polycondensated water-based urea formaldehyde resin modified by a renewable natural polymer and a new patented catalyst.

Foundry cores with very good mechanical properties can be produced using traditional Hot-Box machines or Cold-Box machines that can be heated to a temperature of 80-120°C. Hot air with a temperature of 110°C is released in order to remove the redundant water (solvent).

The main advantage of the air supply is the replacement of CO2 and other organic substances, such as amine or sulphur dioxide, which are formed in traditional core production processes. The patented double catalyst accelerates the reaction and captures excess formaldehyde. The result is an extremely low free formaldehyde content in the work environment.

Innovative coating to prevent white film defects
For many years foundrymen have been struggling with the casting defect "white film", which appears on the casting surfaces of thick-walled castings made of nodular graphite cast iron. This is a pockmark-like, rough area on the casting surface, which is covered with a white film. The film is removed by sandblasting the castings; however the irregular surface remains and often leads to graphite degeneration.

The Hüttenes-Albertus team has investigated in great detail the cause of this problem. Working in close collaboration with selected partners from the foundry industry, a group of R&D chemists and product managers examined through research the causes and conducted field trials. An innovative impregnating coating was developed by closely analysing the causes for the emergence of the film and carrying out individual process steps to overcome the defect.

New adhesives for the foundry industry
Hüttenes-Albertus has been a supplier of different adhesives to foundries for many years. These adhesives can be used for cold and hot curing applications or for curing in the microwave oven.

Most adhesives in cold setting and microwave oven curing contain special types of waterglass and inorganic fillers. As a consequence of this, these adhesives release almost no gas when they are heated for bonding critical core packs.

Besides this, a full line of adhesives with different properties for special applications is available. Real newcomers to the line are, e.g., flake materials for use via large dosing tanks.

Another current project focuses on the development of a special fusion adhesive for the lost foam process.

For further details contact SI Group SA on TEL: 011 389 8200 or visit www.siigroup.com or www.huettenes-albertus.com

SI Group is a global developer and manufacturer of chemical intermediates, specialty resins and solutions that are critical to the quality and performance of countless industrial and consumer goods
SAIF participates in briefing the Parliamentary Portfolio Committee on Trade and Industry on the impact of IPAP on the foundry industry

The South African Institute of Foundrymen (SAIF) was invited by the Parliamentary Committees Section: Portfolio Committee on Trade and Industry to provide input on the progress made in terms of the IPAP interventions related to the National Foundry Technology Network (NFTN), the impact thereof on the local foundry industry, and any challenges that may still affect the industry.

The NFTN has been an intervention and an example of government/industry co-operation to assist a vital but ailing foundry sector.

The meeting and presentations took place on Tuesday, 11 August 2015 in the Old Assembly Chamber, Ground Floor, Old Assembly Wing, Parliament, Cape Town. The SAIF was represented by CEO John Davies.

The Revised Industrial Policy Action Plan (IPAP) tabled in 2010/11 identified a number of sectors that have a high complementarity between investment and employment creation. Subsequent iterations of the IPAP continued to identify the potential of these sectors. The metal fabrication, capital and rail transport equipment sectors, including the foundry industry, have been identified in this regard.

The IPAP set out to enhance competitiveness in the foundry industry, as this is one of the key drivers of the manufacturing sector’s overall competitiveness. The seventh iteration of IPAP 2015/16-2017/18 has been tabled in Parliament with the Minister of Trade and Industry briefing the committee...
on Tuesday, 4 August 2015.

In 2010, the committee had extensive public hearings on the revised IPAP, which included the metal fabrication, capital and rail transport equipment sector. This was followed up with annual engagements on IPAP. The committee has scheduled meetings to engage selected sectors to determine the impact of the interventions (or key action plans) that were identified within the IPAP on these sectors from the implementation of the revised IPAP in the 2010/11 financial year to date. These meetings would act as a follow-up to determine the effectiveness of the interventions identified within the IPAP in this regard.

The interventions related to the National Foundry Technology Network (NFTN) focused on:

- Rolling out the practical training programme in order to increase the competency of the foundry personnel
- Enrolling young foundry men/women in the New Foundry Generation Forum programme aimed at developing future managers and address the aging skills challenge in the sector
- Training workers on NQF 2-4 industry skills programme and in the advanced foundry technology course at University of Johannesburg
- Offering an apprenticeship programme at the foundry training centre at Ekurhuleni East College
- Piloting a learnership programme
- Conducting feasibility studies to establish training centres in Gauteng, Limpopo and KwaZulu-Natal and commissioning them with installed training equipment
- Recapitalising the training centres in Gauteng and the Western Cape
- Providing continuous technical support to foundries to reduce scrap rates and enhance productivity
- Implementing an on-going benchmarking programme for continuous improvements as well as profile and benchmark suppliers as part of the United Nations Industrial Development Organisation (UNIDO) Subcontracting and Partnership Exchange Programme (SPX)
- Rolling out Technology Assistance Packages to manufacturing companies successfully benchmarked in the foundry industry for participation in the Competitive Supplier Development Programme (CSDP) contracts
- Facilitating relevant research and development (R&D) to enhance technology, innovation and transfer
- Mentoring and developing emerging foundries through a two-year programme
- Aligning the Department of Science and Technology-Advanced Institutes for Tooling to national programme
- Completing technical benchmarks on permanent mould foundries and sand foundries
- Identifying and supporting new localisation and/or casting opportunities
- Assisting foundries under the competitiveness improvement programme
- Hosting the World Foundry Forum in South Africa

The committee expressed its interest to engage players in the foundry industry on the impact of these interventions.

“The dti, followed by NFTN and then SAIF/AFSA (Aluminium Federation of South Africa) made presentations, which overlapped slightly but emphasised the major issues facing the industry,” said John Davies.

“inefficiencies in energy supply and not finding an alternative power supply was the probable cause of the contraction in the industry, which has continued to shed jobs since the 2008 economic downturn,” continued Davies.

“This outlook on the gloomy state of the industry was echoed by the NFTN, AFSA, the Toolmaking Association of SA (TASA) and the National Tooling Initiative of SA,” said Davies.

“Despite this the training programmes supported by the government, including the NFTN, the Department of Science and Technology, and the Manufacturing, Engineering and Related Services Seta had had a positive impact on addressing the skills shortage affecting the industry,” Davies told the committee.

“To date, 663 learners have attended courses and 25 diplomas have been presented to those who successfully completed at least six of the eight modules. Since 2013 customised in-house courses were completed at 17 different foundries and 44 advanced technical skills courses were held at the University of Johannesburg or at venues in KwaZulu-Natal, the Vaal and the Western Cape. Industry support for these courses has been increasing and achievement of the “diploma” has been established as a common goal,” explained Davies.

Davies has also called for more training in the sector because, despite the interventions, constraints persist.

Challenges facing the industry

“Other challenges facing the industry include import leakages which result in reduced orders and low competitiveness, rapidly rising energy costs and energy inefficiency, poor material conversion efficiency, the cost of compliance with environmental regulations, limited access to capital, cost, quality and availability of metal scrap and the perception that the foundry environment equals the three Ds — dark, dirty and dangerous.”

Scrap metal export debate

“There is also little understanding of the metal scrap export debate at Government level and it needs much more attention to find a suitable resolution to the current impasse.”

Localisation and designation programme

“All admitted that there are concerns over the implementation of the localisation and designation programme. My personal view of the level of “local content” at 60 to 70 % is actually too low to really drive manufacturing into an upward cycle, but we shall see. There are at present still too many imports and deemed local items to really get traction.”

“The process, however, was very professionally conducted, starting on time and finishing likewise. Every presentation was timed as were questions and answers. Talking, not even whispering was permitted by the chair. Very strict!”

“The chamber was the same as the one in which Verwoerd was assassinated, so it has a history. The buildings are well preserved and maintained, with everything looking “old” but in immaculate condition.”

“Whilst daunting at first, I found it a most interesting and respectful experience and it was a privilege to be in attendance!”
Think again before stealing that steel manhole cover, those phone lines or electricity cables - tough new minimum sentences of three to 25 years in jail are on the way.

The changes are in the Criminal Matters Amendment Bill 2015, which the Justice and Correctional Services Ministry intends tabling in Parliament soon.

The bill creates a new offence.

"It criminalises the unlawful and intentional tampering with or damaging or destroying of essential infrastructure, and provides for the possibility of the imposition of a severe penalty, namely imprisonment which may be up to 30 years," a ministry memo explaining the bill said.

"The creation of this offence provides an opportunity for the legislature to emphasize the seriousness of this offence by allowing for the imposition by courts of a harsh sentence, and to ensure that legislation is in place to regulate this aspect adequately, instead of having to rely on the common-law offence of malicious damage to property, which is often regarded as a minor offence."

The bill says bail for such crimes may be granted only by courts.

When those in positions of trust - police, security guards, employees or contractors of the entity targeted - or gangs are involved, it is regarded as a more serious offence and thus more difficult to get bail.

Minimum sentences are harsh. First-time offenders face a minimum of three years in jail. A second offence brings five years, and third time around it’s seven years in jail.

Scrap-metal dealers and secondhand dealers caught with any metal bits of “essential infrastructure” that can’t be explained legally face minimum sentences of five to 10 years.

Those whose interference with essential infrastructure is regarded as organised crime should expect minimum sentences of 15, 20 or 25 years, depending on the convicted person’s previous convictions, the memo states.

This part of the bill links the infrastructure crimes to the Prevention of Organised Crime Act.

The essential infrastructure is “any installation, structure, facility or system, whether publicly or privately owned, the loss or damage of, or the tampering with, which may interfere with the provision of a basic service to the public”, the bill says.

Basic services include those for energy, transport, water, sanitation and communication.

The bill explains that “essential infrastructure-related offences are becoming increasingly more organised and are often committed by armed and dangerous criminal groups", and while the actions may sometimes seem relatively minor, they cause considerable damage to essential infrastructure.

A copy of the bill will be put on the ministry’s website at www.justice.gov.za

Theft and vandalism of essential infrastructure is an ongoing major problem for both the government and business, with thieves targeting everything from cables and heavy metal in buildings to traffic lights, sewer covers, taps and lamp posts.

The SA Chamber of Commerce and Industry tracks the theft of copper, and its most recent report noted theft of 180 tons of copper nationwide, valued at R12.9 million in May, compared to 179 tons worth R13.6m in April (the lower value for May’s thefts was due to the decrease in the price of copper).

In September the bill was approved by Cabinet.

Visitors to Thailand will reminisce with this picture. It seems as though the country does not recognise underground cabling. One wonders how long it would last in South Africa
Scaw plans
to shed 1000 jobs

At least 1 000 metal workers at the Scaw Metals Group are being processed for retrenchment, the latest casualties of the impact of cheap steel imports into the country from China and India, as the group said it had over the past year been running with numerous cost-saving initiatives that included lay-offs and short time.

Scaw chief executive Markus Hannemann told Business Report that it was contemplating restructuring, and had issued a notice in terms of Section 189 of the Labour Relations Act.

“This unfortunate decision has been necessitated by the current conditions in the steel industry both locally and globally,” he said. “This process could potentially impact about 1 000 of our employees throughout our local operations.”

The development at Scaw comes on the heels of Evraz Highveld Steel pulling the plug on its South African iron operations, citing a lack of working capital as a reason.

Evraz, which at the time said that it planned to stop its steel plant, has been in business rescue proceedings for three months to protect it from creditors.

The company warned that it could cut as many as 1 000 jobs as weaker demand for steel and cheaper imports from China also hit its sales.

South Africa’s biggest steel producer, ArcelorMittal South Africa, also announced it was starting a retrenchment process, but backtracked for procedural reasons and will make its intentions clear soon.

At least 30 000 jobs in the steel sector are likely to be lost as the impact of cheap imports from China and India knocks the local industry.

**Import increases**

According to the SA Iron and Steel Institute, imports of primary carbon and alloy steel products — excluding semis, stainless steel and drawn wire — amounted to 111 150 tons during June, 2.7 percent more than the 108 188 tons imported during May and an increase of 9.6 percent on the 101 422 tons that were imported during June last year.

Imports of primary carbon and alloy steel products during the 12 months from July last year to June amounted to 1 319 053 tons, an increase of 20 percent compared with the 1 099 239 tons of primary carbon and alloy steel products that were imported during the previous 12-month period.

During the first six months of this year, the imports of primary carbon and alloy steel products amounted to 777 467 tons, an increase of 57.1 percent compared with 494 829 tons of primary carbon and alloy steel products imported during the corresponding period last year.

Hannemann said that Scaw was heavily hit “by cheap imports combined with weak demand from the mining and infrastructure and construction industries”.

Scaw, which employs slightly more than 5 000 workers, is a producer of a diversified range of steel products with key operations in South Africa and Australia, as well as a presence in Zambia, Zimbabwe and Namibia.

According to its website, The Industrial Development Corporation holds a 74 percent stake in the group, 21 percent is held by a black economic empowerment consortium and 5 percent by an employee share ownership plan.

“An immediate solution would be to introduce import duties that would provide an almost immediate relief to local companies. We need to take away local obstacles which impede on our competitiveness and provide growth opportunities,” Hannemann said.
When Fritz Otto Wirth, who was born in Germany, purchased the farm Nooitgedacht Estate in 1923, I am sure he never imagined or detected that 90 years later there would be an art foundry and a residential village comprising of a mix of residential and retail components situated on a piece of land adjoining his that is now owned by his relatives.

Nooitgedacht Estate is a 270-hectare estate situated five kilometres from the northern fringes of the historic Boland town of Stellenbosch.

Set under 230 year old oak trees and sweeping Cape Dutch gables, this 17th Century farm is rich in history and tradition and surrounded by some of the most famous wine estates in the South African wine industry. With names the likes of Van der Stel, Cloete, Greet, Baker and Rhodes having all walked through the H-shaped Manor house front door, it is not hard to see why Nooitgedacht has left its mark on the Winelands landscape, and why it is one of the most esteemed addresses in the Cape.

The Manor House was built in 1774 and together with Groot Constantia can be seen as one of the most authentic examples of traditional Cape Dutch architecture in the province.

Today, the estate is under the careful custodianship of the Wirth family and has been since Fritz Otto Wirth purchased it. After his death in 1940, his sister inherited the farm. She died in 1954 and left the farm in trust for Fritz Herman Werner Wirth who is still currently the owner. He and his family now run Nooitgedacht Estate as a wine and fruit producer and private function venue. They strive to uphold the noble history and in doing so, offer visitors a window into a bygone era.

The family still employs the hands-on approach that made it the successful brand it is today, with all members playing their part in the running of the estate, from the weddings, events and wine through to the day-to-day management.

The Estate currently produces a limited number of premium sauvignon blanc and merlot wines, and projects in progress include expanding into sustainable organic farming and the development of The Nooitgedacht Village, a 25 hectare mixed-use village set to the north of the Estate.

The imagination of art comes alive at Bronz Editions
We’re dedicated to realising the power of partnership. Simply by working closely with you, we can understand your needs today, instantly creating new value, whilst driving development forward for tomorrow.

This collaborative philosophy permeates everything we do, building strong and productive long-term relationships. And, as a result, the solutions we provide bring fresh ideas to life, maintaining the most comprehensive portfolio available.

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Fruits from the Estate are exported to Europe and the Far East. The farm supplies grapes to some of the most prominent Stellenbosch wine estates, including Koelenhof Winery, Simonsig and Kanonkop.

In 1989 the family purchased adjacent commercial land with the aim of developing an authentic and sustainable village based on the notion of the old European settlements, where the shared village experience cultivates a unified sense of community. These villages encompass every amenity required by dwellers in order to live a safe and peaceful life. Once fully completed, it is envisioned that Nooitgedacht Village will have all the necessary essentials for residents to live their entire life in the village, from cradle to grave. The viability of the concept has been vindicated, with many buyers saying the reason they were motivated to buy was the notion of returning to an old-world village, removed from the hustle and bustle of the city.

Construction has already commenced with Phase 1 of The Village Walk and Village Square. The pristine Nooitgedacht Farm provides a sprawling 200-hectare scenic landscape, including over five kilometres of walking paths, dedicated mountain biking and an 8-hectare dam for fishing and canoeing. Residents can picnic near the river, lie peacefully and read books under 230-year-old oak trees, with the majestic Simonsberg and Stellenbosch Mountain peaks providing a breathtaking backdrop.

A first class equestrian facility is also on the cards. Furnished with stabling, paddocks and enchanting riding trials, it will allow seasoned riders the opportunity to practice, and new riders the chance to partake in this leisurely pastime. A resident tack shop will also cater to the needs of homeowners and equestrian enthusiasts from the area.

“In Europe you often have these small artist areas in the villages that are very integral to the inhabitants and the village itself. With our village theme for the residential area already in place, in the end it was an easy decision to incorporate the industrial space,” said Christiaan Wirth, who has been the central family member involved.

Establishment of Bronz Editions four years ago

“I have been responsible for looking after the tenants situated on the commercial land for a number of years now and was always interested in the manufacturing aspects. For more than 10 years there has been an art foundry operating from one of the buildings. This interest became a reality four years ago when I acquired the manufacturing side of the foundry and established Bronz Editions. The foundry was experiencing some tough times and the manager at the time put a challenging proposal to me to save the foundry and the livelihoods of the staff.”

“At the time, I had no clue about the manufacturing process, but with the guidance and help of the foundry’s staff and clients, who are mainly well known artists and sculptors, we are now one of the recognised art foundries in South Africa.”

“Modern sculptors who want their pieces cast in bronze depend upon a foundry like ours. Upon receiving the original piece of artwork, we manufacture a silicone rubber mould. Artisans have to skillfully apply the “lost wax” method to wood, stone, clay, plaster and essentially any other form of sculpture to

There is a tremendous amount of work along the way before a finished bronze is delivered

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transform the artist’s vision into bronze.”
“Creating a bronze sculpture is an involved process. The delicate and complicated process should only be carried out by suitably skilled and qualified people with the best equipment available. The process of creating in three dimensions, either for one-of-a-kind or a limited-edition series, incorporating power and movement, textures, taking into consideration the impact of negative space and silhouette, taking into account technical issues such as the weight shift and the balance of the sculpture, reproducing the subject’s physical form while exploring their more abstract, deeper meaning, are all aspects you have to consider.”
“Many ancient bronzes were painted with bright, and to our eyes, garish and distracting colours. Aping the patinas of bronzes found buried after hundreds of years, we use mixtures of chemicals and acids and sometimes a blowtorch to produce years of aging in an hour. These recipes are closely guarded. If the bronze is for indoors it is then waxed. Outdoor bronzes will take on their own colours or improve the ones they have been given.”
“So although more than one bronze may be cast, there is a tremendous amount of work along the way. This explains one of the reasons for the cost of bronzes.”
“Our personal service has been developed to provide a wide range of sculptural services which include origination, scaling up, mould making, casting in bronze, patination and restoration as well as the final delivery and installation.”
“We work with a variety of South African galleries, sculptors and artists with many of their bronzes renowned internationally. They can be seen in boardrooms and reception areas of companies and hotels, private collections and game lodges, throughout the world.”

Art as a chief aspect of life at Nooitgedacht Village
“One of the focal points of Nooitgedacht Village is the artist precinct,
“We have taken into account the delicate environment that the new foundry will be located within while at the same time making it a profitable venture. There are many aspects to consider and I believe the concept could be one of the first of its kind in South Africa — combining residential with a wide variety artistic businesses,” said Wood.
The new foundry will be operational by December 2015. "I am very excited about the prospect of a new Bronz Editions foundry. Its integration into the Nooitgedagt Estate will create an atmosphere of community for inspiration within the very divided South African art scene. From what I have seen, the new foundry will be at the forefront of casting with the new technologies to be applied whilst still retaining the heritage of bronze casting," said Vincent Da Silva, a sculptor based in Somerset West, Cape Town.

"With bronze sculpture, the foundry echoes the artists’ standard for quality and workmanship that is put into every piece. The foundry then becomes one of the key factors in realizing the artist’s vision. I find it fitting that the first step in creating a unique environment for artists is to create a foundry to bring about our visions."

Loosely translated, Nooitgedacht means never imagined in English and detected in Dutch.

For further details contact Bronz Editions on TEL: 021 865 2551/2407 or visit www.bronz.co.za

Top: Creating a bronze sculpture is an involved process. The delicate and complicated process should only be carried out by suitably skilled and qualified people with the best equipment available. The process of creating in three dimensions, either for one-of-a-kind or a limited-edition series, incorporating power and movement, textures, taking into consideration the impact of negative space and silhouette, taking into account technical issues such as the weight shift and the balance of the sculpture, reproducing the subject’s physical form while exploring their more abstract, deeper meaning, are all aspects you have to consider at the same time making it a profitable venture. There are many aspects to consider and I believe the concept could be one of the first of its kind in South Africa — combining residential with a wide variety artistic businesses,” said Wood.

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The best alloys make the best castings.
International Ferro Metals Limited - IFMSA enters Business Rescue

Blames labour and outages - points finger at ‘militant union activity’ and state-ordered safety stoppages of its furnaces.

As a result of deteriorating business conditions, IFL’s South African subsidiary, International Ferro Metals (SA) (Pty) Limited (“IFMSA”), which operates the IFL Group's Lesedi mine and ferrochrome smelting operations, has taken the step of entering into Business Rescue. This is a South African statutory means of enabling a financially distressed company to continue in business, under the supervision of a Business Rescue Practitioner, protected from its creditors. While in Business Rescue there is a moratorium on creditors and others taking legal proceedings or enforcement action against IFMSA or in relation to its property or assets. This allows for the development and implementation of a Business Rescue Plan to seek to enhance the potential return for IFMSA’s stakeholders.

Despite the stringent cost cutting measures taken by IFMSA, its financial outlook is such that it is facing financial distress. The underlying reasons for this were set out in the Production Report for the three months ended 30 June 2015, and the principal ones are noted below.

Since the beginning of the 2015 financial year, the IFL Group has suffered from a downturn in its operations and profitability that has proved more deep-seated and sustained than anyone expected. It is consistent with the significant decline in global commodity markets generally. The Company reported a loss before tax of ZAR176 million for the half year ended 31 December 2014 and operating losses for the second half of FY15 are expected to be similar to the first half.

The price of ferrochrome has continued to decline. This has been caused largely by the slowdown in Chinese economic activity and its consequent effect on stainless steel output and increased production by Chinese ferrochrome producers. These factors have driven prices lower and are expected to continue to keep prices low.

IFMSA has also been affected by rising costs and other factors which have impacted its operations, which largely are outside of its control. This includes militant union activity and a general thrust for above inflation wage hikes which have increased IFMSA's labour costs.

Most significant of all are the rising electricity costs and interruptions in power supply. Ferrochrome producers rely heavily on electricity for their furnaces and are particularly vulnerable to power discontinuity. Since 2007, Eskom’s prices have increased by 374% for heavy industrial users, which equates to 21.5% p.a. against CPI inflation of 6.3% p.a. over that same period. In July IFMSA lost more than 10% of its ferrochrome production because of load shedding and power trips.

Production losses also occurred during the year resulting from section 54 orders to shut the furnaces made by government inspectors. While IFMSA was vindicated in court proceedings to lift these orders, the damage was done. Recently a strike by workers employed by one of IFMSA's contractors resulted in IFMSA having to reduce production from its furnaces and disrupted its logistics and shipping schedule, causing a further loss in production and strain on its liquidity.

The combination of low ferrochrome prices, high electricity prices and other costs and losses of ferrochrome production have strained IFMSA's liquidity to the point that it is now in financial distress that is best resolved through the protection of Business Rescue.

The Business Rescue process may entail a shutdown of its furnaces and all mining operations, significantly reducing its expenses. It will continue to derive income from the sale of Ug2 chromite produced under a contract with Rustenburg Platinum. Such income is expected to cover ongoing costs, allowing IFMSA to continue in business during the period of the Business Rescue.

IFL also owns Purity Metals Limited which owns 80% of the Sky Chrome mine. As noted in the Production Report, mining at Sky Chrome remains suspended. It is not envisaged that Sky Chrome will also decide to enter into Business Rescue.

During the period of the Business Rescue, IFL will seek to sell its shares in IFMSA and Purity. It is reasonably expected that, after satisfying creditors and transaction expenses, a surplus should be generated that can be distributed to shareholders. The Company is in negotiation with an interested party and has been recently approached by others in relation to a potential sale. Any such sale will be subject to obtaining certain regulatory approvals, as a result it is envisaged that the period of the Business Rescue could be about six months. However, it is not certain that a sale on satisfactory terms will be able to be concluded.

Even though IFMSA has been placed in Business Rescue, IFL itself currently remains solvent and expects to have sufficient cash to be able to cover its expenses of continuing operations during the period of the Business Rescue and to implement the proposed sale of IFMSA and Purity.

Given the circumstances of the IFL Group, IFL has applied to the Financial Conduct Authority for a suspension of the listing of its securities on the Official List for a period of six months, or such shorter period in which the proposed sale is concluded.

The decision by IFMSA to seek business rescue caps a long period of low prices, intermittent electricity supply and rising costs. Other producers like Assore, Tharisa and the Glencore-Merafe Resources ferrochrome joint venture, however, have continued investing despite suffering similarly difficult operating conditions.

International Ferro Metals Ltd (IFM) is an Australia-based ferrochrome producer. The Company’s production facilities are located in the North West Province of South Africa. IFM produces ferrochrome from chrome ore located in the Bushveld Igneous Complex. IFM’s Lesedi chromite mine and smelting operations are situated at Buffelsfontein, 100 kilometers north-west of Johannesburg, South Africa. The Company holds an 80% interest in its nearby Sky Chrome deposit. The Company’s total installed capacity is approximately 265 000 tons of ferrochrome per annum. The Company operates in one business segment, being the mining and processing of chrome in South Africa and sale of ferrochrome. The Company’s subsidiaries include International Ferro Metals (SA) (Pty) Ltd, Purity Metals Holdings Ltd, Sky Chrome Mining (Pty) Ltd and International Ferro Metals SA Holdings (Pty) Ltd.
The questions concern the King Shaka statue, partially removed from the Durban airport named in the monarch’s honour. And the official answers are: we don’t know; we don’t know; and March next year, according to newspaper reports.

Five years after the likeness of Shaka component was removed from the original R3.2 million statue, progress is being made with the new statue, at a cost of a further R3.2m, and it is expected to be completed next March.

The old Shaka was removed because — it was claimed — it depicted him as a herd boy.

Provincial government head of communications, Thami Ngwenya, said consultations with King Goodwill Zwelithini, and the size of the current statue, had caused delays to the project.

The original statue, the work of renowned sculpture Andries Botha, was rejected by the Zulu royal household because, according to some, it did not resemble the warrior king.

When it was taken down in 2010, a task team, including historians, was appointed by the premier’s office to look into the history of King Shaka, and in 2011 artist Peter Hall was commissioned to make a new statue, starting in 2012.

Since the “dismembering” of the old artwork, Botha has been calling for the removal of the remaining bull, cow and two calves that complete the sculpture.

He said his appeals had fallen on deaf ears, but that he was not prepared to seek legal recourse for what he called the “harming” of his intellectual property rights.

“My problem is that we consulted before embarking on the project, and all the parties involved agreed on the statue.”

“Now I don’t want to be part of a debate concerning this work because a myriad issues, from culture, race and history, come into play. It is for that reason that I have been making these appeals for them to at least remove the remaining pieces and store them somewhere else, but no one seems to acknowledge my plea, including a letter I wrote to Airports Company South Africa (Acsa) about a year ago making the appeal. Our constitution is very particular about property rights,” said Botha.

Acsa spokesman, Colin Naidoo, denied receiving a letter from Botha.

“The statue that was removed is not even in our safe keeping, it was taken away. Acsa would like to have a King Shaka statue, but what it looks like, who does the art work and design... all that rests with the premier and the Zulu royal household,” said Naidoo.

Ngwenya said the new five metre high statue was now at the foundry.

“The project is under way. The consultations were to make sure that the new statue had all or most of the required features to resemble the late King Shaka. We estimate that it will be completed by March next year,” he said.

Asked about the old statue and the cows at the airport, Ngwenya said he was not sure what would become of the statue or the cows.
The Rapid Product Development Association of South Africa (RAPDASA) will hold its 16th Annual International Conference from 4 to 6 November 2015. The conference will be hosted by Aerosud ITC and the CSIR, on behalf of RAPDASA.

Additive Manufacturing (AM), better known as “3D Printing”, has matured from a prototyping technology into a fully-fledged manufacturing technology. AM products are increasingly being used as final products in the aerospace, automotive, medical, consumer product and other industries. Internationally, unprecedented innovation has been seen in the field of AM and South Africa is certainly contributing to the advancement of AM as a manufacturing technology.

**The conference theme**

Additive Manufacturing Transforming Ideas into Business is aimed at focusing on how Additive Manufacturing is impacting on business and industry. The conference will offer participants the opportunity to:

- Gain exposure to the latest developments in the field of AM
- Share knowledge and ideas through presentations and technical discussions
- Network with experts from industry, R&D institutions, academia and government
- Gain firsthand knowledge of the latest AM technology through the conference exhibition

Day 1 of the conference will focus on a celebration of AM innovation in industry and will see a selected line-up of makers, inventors and users in the field of Additive Manufacturing. This event, the SA Additive Manufacturing Innovation showcase, will allow inventors to interface with industry, universities and students.

**Microfinish Manufacturing takes advantage of foundry assistance programme to increase its global competitiveness**

After the economic volatility in South Africa caused by the financial crisis of 2008, Microfinish Manufacturing underwent a change of ownership and management, resulting in an overhaul of the entire business in order to optimise operational processes and ensure financial rigidity and sustainability.

While the majority of Microfinish’s employees come from the old workforce structure, there has been a fresh organisational culture that has emerged, spearheaded by Brian Naidoo as the Chief Executive Officer of the company.

The Microfinish executives have seized the opportunity to take advantage of a government funded foundry assistance programme to increase its global competitiveness.

The programme is aimed at increasing the global competitiveness of local foundries with export potential. The programme consists of technical assistance by local and international manufacturing experts including the use of advanced simulation technology for process efficiency. The analysis of the design of the current products towards an optimal design for manufacturing was realised through the Casting Simulation Network. The network aims to support the foundry sector, especially SMMEs, with access to simulation software.

Apart from these, papers will be presented on topics covering all aspects of the rapid product development chain, such as AM business development, new application areas in AM, impact of AM on the intellectual property environment, design for AM, reverse engineering, simulation and modeling, process monitoring and control, material evaluation and selection, post processing and qualification, material / process development and product development.

**Conference package**

The conference will be hosted in Pretoria, the beautiful capital of South Africa, at Roodevallei, situated on the banks of the Pienaar’s River in the Gauteng province. The conference fee will be ZAR 3750 for delegates and ZAR 2500 for students which will include:

- 3 days full conference participation
- Lunch and refreshments (tea/coffee breaks)
- Cocktail function
- Gala dinner
- Aeroswift site visit

Limited on-site accommodation is available at ZAR 1100 pppn (single) including bed and breakfast. Online registration is essential at www.rapdasa.org

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**Microfinish Manufacturing**

Microfinish Manufacturing of today. Microfinish places tremendous importance on their ability to analytically measure quality and output of castings and machined products, so that there are better able to make informed decisions and the staff plays an integral role in this process.

Microfinish was originally established in 1986 as a niche market supplier of valve guides and valve seat inserts to original equipment manufacturers (OEMs) and aftermarket customers worldwide. The majority of products are for the export market and hence stiff competition is experienced on the global market in terms of pricing.

The intervention has helped Microfinish improve on a number of manufacturing practices and the services rendered by the company.

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Caldeaz appointed UK partner for Kreon laser scanners

Caldeaz Manufacturing Technologies have cemented the growth of their 3D scanning capabilities by forming a new strategic partnership with Kreon Technologies of France.

Founded in 1991 in Limoges, France, Kreon Technologies is a pioneer in 3D non-contact measurement technology. Today, Kreon offers complete non-contact measurement solutions for quality control, reverse engineering, surface inspection and rapid prototyping throughout the entire design and manufacturing process for industries such as automotive, aerospace, medical, dental, foundry and general engineering. Kreon’s technology is also used for heritage applications. The company says their solutions help manufacturers to reduce production times and to bring their products on the market faster while eliminating manufacturing errors, increasing productivity as well as product quality.

Among its products Kreon manufactures a range of 3D scanners that can be integrated on articulated arms, 3D CMMs or CNC machine tools and a range of measuring arms.

This year Kreon launched its AirTrack robot solution, a touch-and-scan robotic inspection cell powered by Metrolog X4 i-Robot software and the first integrated contact and non-contact measurement tracking solution.

New Ace measuring arm

Kreon also announced a new version of its 7-axis Ace measuring arm that is more ergonomic to handle and has a new "push and pull" way of scanning and probe measuring.

Some of the benefits of this new solution are inline measurement, fast scanning of any type of surfaces combining touch-and-scan measurements in the same sensor, it is easily switched from scanning to probing, it is ready for all geometrical and free form analysis, and programming and reporting are integrated.

The arm is temperature regulated and can be used either in the metrological department or in the workshop. For probing applications, the arm can be used without power supply thanks to its integrated battery and with a wireless connection.

Current Kreon 3D laser scanners (Zephyr II and Solano) are easily integrated with the Kreon Ace arm, and scanners and probes are plug-and-play and can be used with a wide range of leading point cloud and application software.

The Kreon Baces is a portable measurement arm, designed to acquire 3 dimensional coordinates from points, curves and surfaces with simple user operations. Kreon Baces is the ideal instrument for digitizing, reverse-engineering and metrology applications.

Kreon laser scanners can be used in conjunction with any make or model of fixed bed CMM or portable measuring arm, plus other types of portable measuring devices. All Kreon laser scanners incorporate a unique, integrated Renishaw touch probe capability, such that the scanner can be used as a traditional touch probe device or as a high-tech laser scanner, without having to change probes, recalibrate, or disturb the measuring process in any way. The scanners also have an integrated Renishaw connector, so that they are fully compatible with Renishaw PH10, MIH, and probe changers for automated applications, and are extremely compact such that they are not cumbersome in operation.

Caldeaz Manufacturing Technologies, headed up by Ludrick Barnard, provides 3D engineering solutions through products, services and software to a vast range of manufacturers within the disciplines of 3D scanning, 3D measurement, reverse engineering, and 3D printing, also known as rapid prototyping.

More recently, Barnard was the manager of the Centre for Rapid Prototyping and Manufacturing at the Central University of Technology in Bloemfontein where he was responsible for developing products for clients by means of design, reverse engineering, and additive manufacturing, also known as rapid prototyping aka 3D printing.

For further details contact Ludrick Barnard on TEL: 082 780 7305 or visit www.caldeaz.co.za

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Takata Corporation, a global supplier of automotive safety systems including seat belts, airbags, steering wheels, interior trim and child restraint systems has closed its Atlantis, Western Cape facility, including the magnesium diecasting foundry.

The Japanese based company has production facilities on four continents, with its European headquarters located in Germany, where it also has nine production facilities.

The Atlantis manufacturing facility, which has roots dating back to 1951 in South Africa when it was established as AB Jackson manufacturing injection moulded components for commercial and allied industries before being sold to Brencos (Pty) Ltd, was mainly involved in the manufacture of steering wheels, frame shop manufacture, foaming, trimming, leather sewing, leather wrapping and assembly.

In 1961, due to local OEM demand, the company acquired a manufacturing license from German company Petri AG to produce steering wheels. This subsequently led to Petri acquiring a 24% stake in Brencos in 1974 before the remaining shareholding was acquired in 1997.

The company name changed to Petri South Africa in 1998 and subsequently Takata Petri South Africa in 2000 when Takata purchased Petri AG.

The local operation began magnesium diecasting in the steering wheel frame production area in 2005, and final assembly of seatbelt retractors and seatbelt buckles in 2007.

The company had moved its manufacturing plant to the industrial area of Atlantis in 1990 and at the time of closure had over 300 employees. Only 20 staff took up the option of moving to the company’s Durban, KwaZulu Natal operation, which was established in 2013 so that the company could be close to one of its main clients Toyota Manufacturing South Africa. This facility concentrates on the COP-Airbag testing area and driver airbag module assembly and employs 180 staff.

The three diecasting machines used for magnesium diecasting in the steering wheel frame production area were sent to one of the company’s plants in Germany.

Takata have been in the news constantly recently. Certain types of airbag inflators manufactured by Takata were found to have a potential for moisture intrusion over time. As a result, they could be susceptible to abnormal deployment in a crash.

The relationship of moisture intrusion, if any, to the risk of inflator rupture is not known. To date, worldwide no injuries or fatalities caused by this condition have been reported although thousands of vehicles have been subject to recall costing the company millions.

However in a new development, the US National Highway Traffic Safety Administration (NHTSA) also said it has begun an investigation that could yet add millions more vehicles using Takata’s air bag inflators due to new reports of dangerous malfunctions.

The latest investigation could potentially expand a future recall to cover not just older vehicles but millions of newer models. And the new NHTSA probe is targeting a wider range of air bag types, including side-impact restraints, not just the frontal devices covered by the original Takata recall.

dti relaunches industrial innovation support programme

Trade and Industry Minister Dr Rob Davies relaunched the Support Programme for Industrial Innovation (SPII), which assists enterprises through the promotion of technology development and the provision of financial assistance for the development of innovative products and processes.

Addressing delegates at the Innovation Summit, in Cape Town, through a video link, the Minister said the programme had been transferred from the Industrial Development Corporation and would be administered by the Incentive Development and Administration division of the Department of Trade and Industry (dti). The SPII was one of the support instruments developed to give effect to the dti’s work through the Industrial Policy Action Plan and supported small, medium-sized and microenterprises (SMMES), as well as large enterprises.

“The intention of SPII is to promote the development of technologically innovative products or processes that are commercially viable and internationally competitive, thus rendering the [local] industry competitive. Our biggest challenge is to get these industrial innovations to be commercial products,” said Davies. He highlighted that, with SPII, the dti would be able to assist in developing the entrepreneurial mindset and functional skillsets to enable innovators to create and launch their technology ventures.

Davies explained that the programme was based on a matching grant principle, which had succeeded in leveraging funding from the private sector, increasing investment in technology development, diffusion and commercialisation. The programme was divided into three support schemes, the first of which was the product process development scheme — a nonrepayable grant focusing on SMMES and capped at R2 million.

The second was a matching scheme, which provided a nontaxable, nonrepayable grant of between 50% and 75% of qualifying costs and which was capped at R5 million. Lastly, the conditionally repayable partnership scheme — a nontaxable and conditionally repayable grant of 50% of qualifying costs, provided for minimum grants of R10 million. dti deputy director-general of the incentive development and administrative division Malebo Mabúte-Thompson said the department would continue to collaborate with the departments of Science and Technology and its agencies, Basic Education and Higher Education and Training to ensure that support was provided for innovative enterprises. She added that the dti would also ensure that it uses its export promotion schemes to try and expose such products to international markets.
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ArcelorMittal SA will ask the government for tariff protection on all of its products and it will seek specific trade remedies for some, such as antidumping duties, safeguard duties and countervailing duties, CEO Paul O’Flaherty announced recently.

It is the biggest move for protection by an industry in more than 20 years, and shows how much the future of Africa’s largest steel producer is threatened by cheaper imports. It comes in addition to an application for a 10% import tariff already made.

Mr O’Flaherty said the company would be seeking “bound rates on all” products, and antidumping and countervailing duties on some.

This is the first time the company has revealed the extent of the protection it wants. The firm has already made the difficult decision to close its Vereeniging steel plant, which will result in job losses.

Steel prices have fallen amid a supply glut and low demand, worsened by China’s weakened economic prospects.

Tariffs approved by the Department of Trade and Industry in August on galvanised, colour-coated and zinc-aluminium coated steel have yet to be implemented despite being part of an “expedited process”. The Treasury has yet to give the go-ahead for their implementation.

A further 10 applications are still with the International Trade Administration Commission (Itac) for maximum 10% import tariffs, and these are expected to be concluded in the next four months.

Itac confirmed that it had received an antidumping application from ArcelorMittal SA.

Itac commissioner Siyabulela Tsengiwe was surprised to hear that it would also be seeking countervailing and safeguarding duties. “Up until now, they have only been discussing antidumping with us,” he said.

Director of trade advisory firm XA International Donald McKay said while Itac claimed to process applications for tariff protection (within the bound rates) in four to six months, in reality it took longer.

“This is the biggest set of protective actions in SA we have seen in 20 years. I wonder if they do have the capacity,” Mr McKay said. Investigations for trade remedies can take up to a year to finalise, but it is possible for Itac to apply preliminary protections while it does its work.

The first applications for protection on several steel products were approved in August 2015, with Trade and Industry Minister Dr Rob Davies confirming that duties across eight tariff subheadings would be increased to the World Trade Organisation bound rate of 10%.

However, government insisted that there could be no price increases for the steel products in question and also placed conditions on job cuts and future investments at beneficiary companies.

The increase in protection was approved following an investigation by Itac, which recommended that the duties on zinc-coated, or galvanised steel, aluminium-zinc coated steel and colour-coated steel be increased from free of duty to 10% ad valorem.

The dti’s approval is to be followed by the publication of the tariff in the Government Gazette by the National Treasury, which would put the tariff into effect. Part of the approval conditions included that ArcelorMittal South Africa (Amsa) would invest R250 million in its colour line and Safal Steel would spend R300 million on its metal coating line in 2017.

Other conditions included that Itac would conduct a review of the duty structure to determine its impact on the industry value chain, three years from the date of implementation. A further condition included that both Amsa and Safal commit to no retrenchments in these production lines over the next three years.

ArcelorMittal SA says it has no choice but to start consulting around possible retrenchments at its Vaal meltshop and the forge in the Vereeniging Works.

In a statement to shareholders the steel maker said - despite its best efforts to find a solution to its current woes - the outlook for the steel sector will not change for the foreseeable future.

Cheap imports from China have led to Evraz Highveld Steel and Vanadium moving into business rescue proceedings, and ArcelorMittal previously warned it was pondering to close a plant that employs 1 200 people. 400 jobs are on the line at the Vaal meltshop and the forge in the Vereeniging Works.

Meanwhile, downstream operators bemoaned the devastating effect a tariff could have on their businesses, highlighting the fact that cheap steel imports are a boon for this segment of the market.

Neasa CE Gerhard Papenfus said import tariffs would only protect the main steel producers and “deny downstream manufacturers the benefit of the cheaper steel”.

“We need to establish what it is that needs to be done to give SA a competitive advantage. Our mineral advantage is completely underutilised. Structural deficiencies on our labour dispensation need to be addressed — that will require strong political leadership.”
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The MTMA (Machine Tool Merchants Association of Southern Africa) has confirmed that they will endorse and run a stand-alone machine tool and related industry supplier exhibition that will take place on a three year cycle.

The MTMA last held an exhibition for its members and other companies associated with the industry in 1997. Held every four years, the exhibition name was derived from the year it was held i.e. Machine Tools 97. The history of the exhibition dates back to the 1970’s when it was first held at the Milner Park Showgrounds, Johannesburg before moving to the Nasrec Expo Centre.

“The exhibition ceased purely for economical reasons,” said Hans-Peter Neth, current Chairman of the MTMA.

“We held the exhibition every four years in February, and we always seemed to time it as the economy was on its way down or struggling. This placed a huge burden on exhibitors as the majority would import expensive equipment to display the latest technology available, and then could not sell the equipment after the exhibition,” explained Neth.

“Over the last decade we have co-exhibited on the Electra Mining exhibition platform, which takes place every two years, and have been located in Hall 9. But this has now reached saturation in terms of space available. The result is that a number of companies have not been able to book space and we have discussed resurrecting our own exhibition.”

“It has now been confirmed by the MTMA committee that the Machine Tools Africa 2017 exhibition will take place from 9 to 12 May 2017 at the Nasrec Expo Centre and will be organised by the MTMA together with Specialised Exhibitions.”

“It is the intention to make it an all encompassing exhibition for the niche, but very important, area of industry that we operate in. This includes tooling, software, metrology, additive manufacturing, foundries and many others.”

“Quality tools and machinery are the backbone of the South African manufacturing industry. This important sector will take centre stage at Machine Tools Africa 2017 with all the latest innovations, products, services, technologies, trends and developments,” says Neth.

Manufacturers and suppliers will showcase a broad range of machinery, equipment, products and services involved in the machine tools cycle. This will include sheet metal and plate processing machinery, metal tube and pipe processing machinery, metal forming and metal cutting machine tools, machines for welding and for thermal and surface treatments, special purpose machinery for electrical and hydraulic, and mechanical, hydraulic and pneumatic driven devices. In addition, foundry and forging technology and equipment as well as bearing, gear generating, mould processing, manufacturing technology and equipment. Also in the spotlight will be robotics, mechatronics, automation hardware and software, additive manufacturing technologies, assembling, tools, parts and components, cutting tools and accessories, metrology, quality control, and systems for safety and environmental protection.

“The synergies that exist between all of these companies heightens the fact that we cannot operate in isolation and as a result will attract a broader audience that will be mutually beneficial to all.”

Visitors to Machine Tools Africa 2017 will include all those involved in machine tools across various sectors including general mechanics, machine tools, mining, manufacturing, automotive, metallurgy, paper/pulp, research and engineering, aeronautics, aerospace, railways, energy, electronic and IT.

A series of free-to-attend technical seminars co-located with Machine Tools Africa 2017 will enhance the visitor experience and add value to the programme.

For more information email mtma@mtma.co.za or Leatitia van Straten, Marketing Director at Specialised Exhibitions Montgomery leatitiavs@specialised.com
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Depending on how seriously it took localisation, in 10 years the motor industry in South Africa could be employing either 35,000 or 180,000 people, analyst Justin Barnes said in a report in Business Day. The future of the industry was not at risk, he said. The only question was whether it turned into a true manufacturing industry or one that simply assembled parts.

Motor companies and their components suppliers had to work harder to increase local content in vehicles made in South Africa, or sacrifice jobs, skills and technology transfer. Prof Barnes, one of the architects of the government-led automotive production and development programme, was speaking at an automotive localisation indaba in Durban.

Describing the motor industry as the “golden nugget” of South African manufacturing, he said average local content in cars and light commercial vehicles made in South Africa grew marginally to 41.5% last year, from 41.0% in 2013. Using the definition of local content as the vehicle wholesale price less total imported content, he said R47.1 billion of local components were built into vehicles last year. With an average vehicle value of R212,889.00 that worked out to R88,316.00 worth of homegrown parts. This is well short of the industry’s target of 70%. One of the cornerstones of the 2013-2020 automotive production and development programme is to incentivise more investment in the local supply industry.

The Department of Trade and Industry is expected to announce extra incentives soon as the result of a review of the programme. Many of the parts in South African-built vehicles are wholly imported or contain imported materials.

Prof Barnes, chairman of B&M Analysts, said sectors increasing their contribution included plastic mouldings, trims and harnesses. Losers included foundries and forges — meaning more steel parts were coming from overseas.

He asked: “Can South Africa become a manufacturer of vehicles if it fails to rebuild its foundries, forges, stamping and moulding operations?”

There were three employment scenarios in 2025, based on current annual production. Existing local content, at 41%, would provide 60,000 jobs. A decline to 30% would bring it down to 35,000 to 45,000, and 70% would increase employment to between 150,000 and 180,000.

Theunis Rootman, purchasing GM at Toyota SA and chairman of the motor companies’ purchasing council, told the conference: “We need deeper localisation. The only way for us to survive is to work together and grab the opportunities made available to us.”
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Lightweighting iron alloys in thin-wall castings

Improved melt processing could decrease the wall thickness of certain ductile iron cast automotive parts by up to 50 percent, saving up to 50 percent in weight.

“By integrating and implementing improved manufacturing methods with different available alloys, there is potential to decrease the wall thicknesses of ductile iron cast parts by up to 50 percent. That, in turn could save from 30 percent to 50 percent weight savings, depending on the load requirements of the part.”

“People don’t often think of iron alloys as lightweight, so this first project shows how we are really changing the thinking about manufacturing in America,” said Larry Brown, the executive director of LIFT. “We expect that by working together through us, the collaborators from industry and academia will be able to accelerate the speed of turning their R&D into a production line process.”

“By integrating and implementing improved manufacturing methods with different available alloys, there is potential to decrease the wall thicknesses of ductile iron cast parts by up to 50 percent. That, in turn could save from 30 percent to 50 percent weight savings, depending on the load requirements of the part.”

Jay Solomond, the vice president of engineering and technology at Grede, said, “During early product development, parts are designed to meet the limiting performance criteria. This often results in parts being globally designed with extra material to meet the minimum requirements. However, this also often results in unnecessary weight to the overall part. We want to put the right amount of material just where it needs to be, and to replicate that on a scale for automotive production lines.” Grede expects to do a significant amount of work on the project in its foundry in St. Cloud, MN.

Paul Sanders, the associate professor of materials science and engineering at Michigan Technological University, said, “Iron alloys have high stiffness and good strength. We will optimize composition and cooling rate utilizing Grede’s new high precision molding machines to create thin-wall ductile iron components while maintaining desired microstructures and performance. We look forward to integrating upfront modeling with local cast properties to design optimized component geometries. We hope to bring this lightweight design methodology into Grede’s production facility.”

James Larsen, the manager of materials and power transfer system engineering for Eaton’s Vehicle Group, said, “In our ultra-competitive product markets, timelines to achieve cost and weight reduction are critical. LIFT is providing a valuable service by facilitating collaboration that will help speed up how we are able deliver great concept ideas into our customer’s products. We are involved because we are confident this work will translate into delivering value to them.”

The American Foundry Society is involved in the project to ensure that workers in the industry have opportunities to learn how to use the new materials and techniques that will come out of the project. The Society conducts workshops, webinars, and other training sessions through its AFS Institute.

LIFT is one of six manufacturing innovation institutes announced to date and supported by the federal government. LIFT receives its funding from the U.S. Department of Defense administered by the U.S. Navy Office of Naval Research. Approximately 44 percent of the estimated $1.34 million costs for this melt processing technology acceleration project will be paid for by the federal government, the other 56 percent will be shared by industry and research partners.

Brown added, “We expect to be seeing results from this first project in about a year. And with nearly 90 industry and academic partners in our consortium, we expect to be announcing more technology projects on a regular schedule, as well as important education and workforce development initiatives to make sure we have people well trained in the innovations we are generating.”
Despite significant technical and economic advantages, semi-solid metalcasting (SSM) has never advanced to become the major metalcasting process anticipated by so many early investigators. Still, there are still several positive indicators of the value of semi-solid casting for aluminium alloys, as detailed by Pascal Côté, Giovanni Pucella, and Steve Midson in their report, The Benefits of Semi-Solid Casting for Aluminium Alloys.

Proceeding from the proposition that there are multiple advantages to producing castings in uncoated metal molds (including surface finishes, close dimensional tolerances, and fine-scale microstructures, due to rapid heat extraction) they address the challenge of high-cooling rates and solidification irregularities with existing semi-solid metal casting technologies.

The Swirled Enthalpy Equilibration Device (SEED) process they introduce represents a new possibility for high-volume, high-productivity, thin-walled casting production. It is a technically advanced and economically successful rheocasting processes that minimizes turbulence during the production of the semi-solid slurry — making it effective for producing high quality castings. It optimises metal quality during both the production of the slurry and during the casting process itself, and may represent the future for semi-solid casting production.

Neo-Rheocasting - Semi-solid metalcasting maintains all the advantages of diecasting, while eliminating all (or most) of the residual porosity, thereby producing high-quality, thin-walled castings with excellent mechanical properties

Examining semi-solid aluminium casting and the SEED process
Federal-Mogul Powertrain develops new high strength aluminium alloy material for automotive diesel pistons

Federal-Mogul Powertrain has developed a new cast aluminium alloy it claims will increase the strength of pistons for high-performance diesel engines, supporting higher mechanical loads that will result in higher specific power and greater efficiency.

Specifically, the auto parts supplier said the DuraForm-G91 alloy would extend the performance life of diesel engine pistons by three to five times, compared to standard as-cast materials. It said the new composition increases fatigue strength in the high-temperature ranges typical for pistons of highly loaded diesel engines.

"The improved silicon and intermetallic morphology provides a microstructure with increased resistance to complex thermomechanical loading," according to Dr. Frank T.H. Dörnenburg, the group’s director of technology, Global Pistons, "while maintaining the required thermo-physical properties, such as expansion, density and thermal conductivity."

Federal-Mogul Powertrain said the new alloy makes it possible to design pistons with a lower compression height and reduced mass, the particular advantages of which will be a lower reciprocating mass. In turn, this will allow designers to adopt smaller, lighter cylinder blocks that will reduce CO2 emissions for the vehicles in which they are installed.

Development of the alloy and the new pistons was done at Federal-Mogul Powertrain’s Technical Center in Nuremberg, Germany, which is where the pistons are being manufactured currently. According to a Federal-Mogul source, some pistons have been delivered to unnamed customers for testing, but no start date for series production has been announced.

In addition to the material research and product design, the Nuremberg project involved “advanced testing techniques” that reportedly will shorten the validation period. "We have employed specially designed accelerated base engine tests combined with 'engine-like' rig testing procedures," according to Roman Morgenstern, a material development and characterization specialist.

"Engine-like rig testing combines thermomechanical fatigue with high-cycle mechanical fatigue, which directly reflects the fatigue-critical load conditions seen by automotive diesel pistons in the engine."

"This is an example of the enabling technologies developed by Federal-Mogul Powertrain that help our customers to make each new engine generation more compact, lighter and with a smaller carbon footprint than its predecessor," stated Gian Maria Olivetti, chief technology officer, Federal-Mogul Powertrain.

"With our materials scientists at the technological forefront of the industry, we are committed to developing advanced new concepts for both aluminium and steel-based pistons for diesel vehicles, offering perfect fit solutions for the various needs of our customers."

Maus acquires Savelli and Fritz Hansberg

Maus, Savelli S.P.A. and Fritz Hansberg have entered into a strategic partnership agreement under which Maus, a leader in automatic grinding and vertical turning, will acquire both Savelli, a manufacturer of moulding lines and sand plants for green sand foundries and Fritz Hansberg, a manufacturer of core making equipment. The resulting group will provide foundry automation and machining equipment.

“This complementary combination, besides representing a strategic growth platform for the three companies involved, will bring substantial value to customers. With the core making technology from Fritz Hansberg and the moulding line technology from Savelli, Maus completes its portfolio as a full global solution provider for foundries,” said a company spokesperson.

“Recent trends show clearly that the foundry equipment industry is concentrating. The combination of Maus, Savelli and Fritz Hansberg will further strengthen the group’s presence in key markets such as Europe, USA and China and will position the group to be a reference point for the industry going forward,” said Mr. Roberto Sammartin, CEO of Maus.

The resulting group will have revenues in excess of 60 million euro.

Savelli S.P.A. has subsequently filed for a creditor protection order with an Italian court. It is not known how this will affect the relationship with Maus.

In April this year Maus Srl established a joint venture with Palmer Manufacturing & Supply, Inc. to consolidate and expand the Maus brand and sales network in North America. Palmer Manufacturing & Supply, Inc. is a USA producer of no-bake foundry equipment with a well-recognized presence in the foundry industry.

The parties have agreed to enter into a joint venture agreement with the intention of establishing a cooperation under USA law which is 70% owned by Maus and 30% owned by Palmer.
Dates for your diary

IFEX January 29–31 2016
The 12th International Exhibition on Foundry Technology, Equipment, Supplies and Services & 7th Cast India Expo concurrent with 64th Indian Foundry Congress will be an excellent platform for the Indian as well as overseas companies to showcase their state-of-the art technologies and services being offered to this vibrant industry and be exposed to new business opportunities. www.ifexindia.com

CastExpo16
CastExpo & 120th Metalcasting Congress
16-19 April 2016
Sponsored solely by the American Foundry Society (AFS), CastExpo is the single largest trade show and exposition for metalcasting in the Americas. CastExpo offers metalcasters, suppliers, and casting buyers and designers the opportunity to connect and educate themselves on the latest and greatest metalcasting has to offer. www.afsinc.org

WFC2016
The 72nd World Foundry Congress 21-26 May 2016
With an expected number of exhibitors exceeding 100 companies from Japan and abroad, the exhibition will be a venue to introduce foundry products made of steel, aluminium and copper alloy, as well as equipment, molds, secondary materials and cutting-edge technology, such as the latest analysis software and 3D printers. In addition, the exhibition will provide opportunities for interactions. www.wfc2016.jp

Ankiros 29 September-1 October 2016
Suppliers to iron, steel and the foundry industries will be displaying all kinds of machinery, technology, services and equipment such as furnaces, refractories, test and analysis devices, casting machines, sand reclamation machines, etc., that meet the various needs of the foundry industry as well as the raw materials, metallic charging systems, refractory and insulating materials, furnaces, rolling mill equipment, control systems, labeling equipment necessary for the production of iron-steel production. www.ankiros.com

METEF, expo of customised technology for the aluminium and innovative metals industry 21-24 June 2017
Dedicated to the aluminium and innovative metals production chain, METEF is an exhibition of customized technology for the aluminium and innovative metals industry that has moved to every odd year. This was announced by Giovanni Mantovani, General Manager of Veronafiere, and aims to meet the needs of the adhering companies by showcasing the specialization of the Italian and European firms in the aluminium and innovative metals industry in a single event. www.metef.com
Warren Buffett's Berkshire Hathaway has agreed to buy Precision Castparts, a leading supplier to the aerospace industry, for $37.2 billion, in the largest acquisition in the conglomerate's 50-year history.

Berkshire Hathaway will pay $235 per share in cash for all of PCC's outstanding shares, a 21% premium on PCC's closing price of $193.88, the companies said in a joint statement in August.

Including Precision's debt, the deal is valued at about $37.2 billion, eclipsing Berkshire's 2010 acquisition of rail operator Burlington Northern Santa Fe in a cash-and-debt deal valued at $36.5 billion.

Precision Castparts will keep its name and its headquarters in Portland, Oregon, as a wholly owned subsidiary of Buffett's holding company, which currently owns about 3% of its stock.

The deal is subject to approval by PCC holders of the outstanding shares and by regulators, and is expected to be completed in the first quarter of 2016.

"I've admired PCC's operation for a long time. For good reasons, it is the supplier of choice for the world's aerospace industry, one of the largest sources of American exports," Buffett, Berkshire's chairman and chief executive, said in a statement.

Precision Castparts manufactures complex metal components and products for the aerospace industry, including aircraft makers Boeing and Airbus, and also products for chemical processing and the oil and gas industry.

"When you get a chance to buy a wonderful company, there is usually some reason why you are getting that chance, and perhaps a slump in oil and gas helps us in this case," Buffett told CNBC.

It had more than $10 billion in revenue in its fiscal 2015 year that ended in March, with net profit of $1.53 billion.

No 'Elephant' in sights

Buffett suggested the deal would be Berkshire's biggest for at least a year, although smaller deals were likely in the next six months.

"This takes us out of the market for an elephant," Buffett said in an interview on CNBC television.

"We'll be left with over $40 billion probably of cash when we get all through (with PCC)," he said. "But I like to have a lot of cash at all times. This means we have to reload over the next 12 months or so."

Berkshire ended its fiscal second quarter on June 30 with $66.6 billion in cash. Precision's businesses in energy-production equipment were also a lure, Buffett said, amid a 50% drop in oil prices since mid-2014.

"When you get a chance to buy a wonderful company, there is usually some reason why you are getting that chance, and perhaps a slump in oil and gas helps us in this case," Buffett told CNBC.

Shares of PCC soared 19.1% to $230.88 in morning trade on the New York Stock Exchange.

Berkshire "A" shares, the priciest on US markets, fell almost 1% to $213,400.00. Berkshire "B" shares were down 0.7% at $142.52.
Newcast awards go to winners from Germany, Austria and Switzerland

Since the first Newcast show in 2003 the Newcast Award is a special highlight of “Bright World of Metals”. This year’s winners were honoured by the trade fair managing director Joachim Schäfer, during a ceremony at the bdguss (German Federal Association for Foundry Industry) forum on June 17th, 2015. They are Gebrüder Kemper GmbH from Olpe/Germany, MWS Industrieholding GmbH from Kufstein/Austria as well as the Swiss Company Georg Fischer Automotive from Schaffhausen/Switzerland. Thomas Funke and development engineer Sebastian Ruhland from Gebrüder Kemper GmbH received the prize for the cast-piece with the best integrated functionality from presenter Arne Birken. MWS received the award for a carrier module developed and manufactured in Friedrichshafen, a cooled high-voltage resistant battery mount for electric vehicles; investments in a manufacturing line plus processing facilities were made specifically to enable this development.

Subsequently the prize Aqua Perla Professional was presented which was produced with the sandcasting method. Aqua Perla is used in the building industry and in the drinking water treatment.

The award for best cast-technical solution with the extension of cast-technical boundary went to the MWS Industrieholding. CEO Josef Stieglzer as well as sales and marketing manager Hans Zeller received the award for the development of a Carrier Module, which is cast with the aluminium-sandcast method and applied for vehicle manufacturing.

The prize for best substitution of a different manufacturing method went to Georg Fischer Automotive. Martin Guthoff from the technical product management of the company as well as Dr. Martin A. Stehle, sales director, were awarded for the construction of a console for cab mounting on a commercial vehicle. The console is manufactured at the company’s automotive casting facility in Singen/Germany with the spheroidal graphite casting method.

The winners received a prize, fitting to the show for casting products, in the form of a casted Newcast-Logo, a voucher for two persons for a visit to the International Foundry Forums on September 23rd and 24th, 2016 in Leipzig, including accommodation for two nights as well as a certificate of distinction.
The innovative new Jaguar XE will redefine the standard in its segment. Designed around Jaguar’s modular vehicle architecture, the XE is the only car in the class to use an aluminium-intensive monocoque, with lightweight aluminium accounting for 75 per cent of the structure.

This milestone in body engineering, a product of Jaguar’s world-leading expertise in high-volume production of aluminium vehicles, ensures that the Jaguar XE combines outstanding design with benchmark levels of ride and handling — it will be the true driver’s car in the segment when it launches locally, in September.

Lightweight construction is a core element of Jaguar’s DNA and Jaguar is at the cutting-edge of aluminium technology in the automotive industry. The Jaguar XJ, XK and F-TYPE have all been developed using exceptionally stiff bonded and riveted aluminium structures. The XE is the latest model to use this aerospace-inspired technology.

It is also the first car in the world to make use of a new grade of high strength aluminium called RC 5754 which has been developed specifically for the XE. This new alloy features a high level of recycled material and makes a significant contribution to Jaguar’s goal of using 75 per cent recycled material by 2020.

The resulting weight savings ensure that the XE is the most fuel-efficient Jaguar yet. With its 2.0-litre i4 turbo diesel engine, producing 132kW and 430Nm, it boasts a combined fuel consumption figure of 4.2 litres/100km and CO2 emissions of only 109g/km. These low emissions also place it below the South African government’s carbon tax threshold of 120g/km, and thus buyers can avoid having to pay additional carbon taxes.

“The Jaguar XE body uses over 75% aluminium content, which far exceeds any other car in its class. This gives us a body structure with unrivalled low weight: it’s light but also immensely strong with extremely high levels of torsional stiffness. We’ve made sure our aluminium-intensive body structure exceeds all global safety standards without compromising on vehicle design or refinement,” says Dr Mark White, Jaguar’s Chief Technical Specialist for lightweight vehicle structures.

Even with beautiful, eye-catching lines, the Jaguar XE’s aluminium-intensive body structure still offers exceptional torsional stiffness. Lightweight, yet strong, it incorporates highly advanced suspension systems to deliver unparalleled levels of ride quality, handling and steering.

DNA and Jaguar is at the cutting-edge of aluminium technology in the automotive industry. The Jaguar XJ, XK and F-TYPE have all been developed using exceptionally stiff bonded and riveted aluminium structures. The XE is the latest model to use this aerospace-inspired technology.
Audi boosting production at Münchsmünster factory

Audi has disclosed plans to ramp up production at its Münchsmünster, Germany factory located 30 km east of its Ingolstadt facilities. This is the venue where they make hot and cold formed components, lightweight aluminium structural parts, high-tech chassis components and other bits and pieces for the second generation Q7. Within the next two years, 900 employees will be working at this production site where they will ship around 26 million parts annually.

Right now there are 500 employees working at this facility in a two or three-shift system while at the end of this year Audi is going to implement a three-shift basis for all of the manufacturing areas at the Münchsmünster factory. So far this year, more than 30,000 structural components have been made in the aluminium die-casting foundry, including connecting elements in the suspension gear mounts and suspension strut supports for the next-generation A4, and at the end of this year the total volume should reach around 200,000 parts for the new Q7 and A4.

They are now installing a fully automated laser system in the press shop at the Münchsmünster factory and it will be fully functional later this year when a total of 40 different pressed parts will be made, including the tunnel bridge and side members of the A4 B9.

Audi has made 1.38 million parts at the chassis component production facility and that number will grow to 4.6 million at the end of 2015. This is where they make swivel bearings, wheel hubs, hub carriers and brake discs for the following models: A4, A5, A6, A7, A8, Q5 and Q7.

“The components we are manufacturing in Münchsmünster are helping us perfect our systematic lightweight construction,” says Hubert Waltl, Audi’s board member for production.

“This is a major contributor to reducing weight in the new Audi Q7, which is up to 325 kilograms lighter than its predecessor.”

Audi began operations at its new manufacturing facility in late 2013. In addition to diecasting capabilities, the Münchsmünster site also produces hot- and cold-formed pressed parts and chassis components.

ASK Chemicals centralises Spanish operations in Bilbao

ASK Chemicals is to consolidate its existing Spanish plants in Castro Urdiales, Idiazabal and Artziniega into a single industrial complex covering ten thousand square meters in the Port of Bilbao, which will become a flagship facility for the ASK Chemicals Group. A total of 10 million euros will be invested in the move to the new site as part of the group’s expansion and growth strategy.

ASK Chemicals has three production plants in northern Spain — one in Castro Urdiales in the Cantabria region, and two in the Basque Country: the first in Idiazabal, and the second in Artziniega. The new site consists of a ten thousand square metre industrial unit in the Port of Bilbao (Zierbena area), on a plot measuring some thirty thousand square metres.

The newly created plant will supply the foundry markets of neighbouring countries, becoming a flagship site for the ASK Chemicals Group. To avoid supply issues for customers and help ensure a smooth start to operations at the new plant, the move to the new facilities will take place in several phases. The anticipated initial investment for the first phase is 6 million euros. That figure will rise to 10 million euros by the time all the phases are complete.

ASK Chemicals España does not only intend to retain all existing 80 members of staff but also to expand its workforce to around 90 - 100 employees in the future.

“The decision to move to one plant was clearly motivated by our growth strategy and the need to concentrate our operations,” Gary Reed, Chief Operating Officer at ASK Chemicals, states. “One important reason for us choosing the Port of Bilbao is clearly its prime geographical location, which will enable us to provide a better service to Southwest Europe (Spain, France, Italy and Portugal).”
The Aluminum Association, based in Arlington, Virginia, USA, which represents producers and suppliers to the North American aluminium industry, has expressed concern about a recent call for the removal of a long-standing 15 percent tax on primary aluminium exported from China, according to recyclingtoday.com.

The call came from the China Non-Ferrous Metals Industry Association, asking relevant national authorities to eliminate the provisional export tariff on aluminium.

The Aluminium Association says the unilateral removal of these taxes could have unforeseen impacts on the balance of trade and the global aluminium market.

According to an economic analysis by Brooklyn, New York-based research firm John Dunham & Associates, U.S. aluminium production is responsible for a minimum of 10 600 jobs and $6 billion in economic output. This segment could come under additional pressure should China remove the export taxes on primary aluminium, the Aluminium Association says.

“We strongly encourage the Chinese government to consider both the impact on the global aluminium market as well as the impact on their country’s own sustainability goals before heeding any call to remove export taxes on primary aluminium,” says Aluminium Association President and CEO Heidi Brock.

“During a time when China is making global commitments to reduce greenhouse gas emissions, it would be a serious mistake to change course on this long-standing policy.”

According to the Aluminium Association, the carbon footprint for primary aluminium produced in North America has declined by nearly 40 percent since 1995, while aluminium produced in China is still among the most carbon intensive in the world. Aluminium smelters in China emit 5 percent of China’s total CO2e emissions, the Aluminium Association claims.

The association has also expressed concern about growth in the share of aluminium imported into the United States. According to Aluminium Association data, from 2012 through 2014, U.S. imports of semi-fabricated aluminium products (semis) from China increased 115 percent, growing China’s share from roughly 14 percent to nearly 28 percent over that period. Imports of Chinese semis totaled 675 million pounds year-to-date, an increase of 75 percent over the same period in 2014.

The increase in volume has driven up China’s market share to account for nearly 36 percent of all aluminium semis imported through June 2015, up from 26 percent last year, the association says. To put this in perspective, total U.S. imports of semis from all countries outside of China are up roughly 11 percent year to date.

The Aluminium Association has recently expressed concerns about misclassified metal coming out of China as well as the removal of a long-time duty on aluminium rod and bar.
France is the third largest automotive producer next to Germany and Spain with an annual output of about 3 million vehicles as an average. The main drivers for growth in automotive sales in 2014 are expected to be high discounts, cheap financing, government-subsidised schemes for buying new cars and a number of new models. The federal government of France is weighing up the introduction of new policies to help the automobile industry in the country. The government is not only aiming to help the local automobile companies but also aims to help foreign companies to invest in the country.

From 2016, the Yellow and Green Tariffs for regulated industrial and commercial consumers will be removed. This would result in almost doubling the share of buying from the open market from 31% to 60%. This is good news for major energy consuming industries such as the metal casting industry, as it would clearly give a price advantage of 15–20 EUR/MWh to commercial and large consumers. With increased government measures and subsidised schemes, the French automotive industry is estimated to show a steady growth, especially with the passenger car segment in years to come. Issues on the energy procurement related factors for the metal casting foundry industry to facilitate domestic supply of castings and cost savings with regard to French automotive OEM have been dealt with in detail.

**Recommendation**

When the market is deregulated in 2016, it will encompass more opportunities for new products to the consumers such as customised energy contracts for large buyers, customer services, flexible payment terms etc. Competition will thus focus on diversified services to industrial consumers. The automotive OEM’s could focus on encouraging their major metal castings supply base to focus on bilateral contracts with the power generating/distribution companies where the savings could be reached for about 10–12% in long term engagement, rather than the spot market practice where the savings could be realised for about 3–4% in the long term with regard to electricity consumption.

For further details visit http://beroeinc.co/1Gyc3MX
Through thick and thin —
the melting furnace for structural components

“StrikoMelter BigStruc” also melts extremely thin-walled and large-volume returns with little metal loss.

The melting of bulky and thin-walled returns is a challenge frequently facing aluminium foundries as a result of the growing trend towards lightweight construction in the automotive sector. For this reason, the expert StrikoWestofen (Gummersbach) has now developed the “StrikoMelter BigStruc”. This melting system is designed to function extremely energy-efficiently, even with exceedingly thin-walled returns. Thanks to its special shaft design, the BigStruc can even handle returns with an area of up to 2.5 m² without any problems whatsoever. Other new developments in the BigStruc guarantee very low metal loss for charge material of all geometries as well as high heat recovery rates, even at a low bulk density in the shaft.

More and more structural parts are now being manufactured using the die-casting process, and this is changing the demands made on aluminium foundries: on the one hand, it leads to considerably larger, flatter returns. On the other hand, however, companies are increasingly faced with small-sized, extremely thin-walled returns. The new “StrikoMelter BigStruc” from StrikoWestofen (Gummersbach) is designed to meet precisely these high demands.

Simple solutions are often the best ones for high availability.

The wider range of geometries which have to be remelted in the foundry as a result of the casting of structural parts has led to new, complicated furnace solutions being offered in the market. These often push up the investment costs still further and, in addition to natural gas, consume considerable amounts of expensive electric energy — for example for the electromagnetic agitation of the holding bath and for the hot gas fans designed to melt the material in huge holding baths.

StrikoWestofen has added the BigStruc model to the globally tried-and-tested StrikoMelter series of furnaces by means of a number of simple new developments. BigStruc allows the optimum melting of bulky cast parts as well as extremely thin-walled or small-sized returns.

Although the return material is very demanding, BigStruc guarantees minimum metal loss and the well-known low energy consumption of the StrikoMelter series. While still in the shaft, the cast parts are preheated without direct exposure to the flames and rapidly melted at the foot of the shaft. The hot metal then flows directly from the melting bridge into the holding bath, where it is heated to the desired temperature. As a result of the continuous melting process, temperature fluctuations do not occur in the holding bath. Liquid metal for supplying the foundry is also available at all times. “The special feature of our BigStruc is its high energy efficiency, even at a low bulk density in the shaft,” explains qualified engineer Rudolf Hillen, product developer and StrikoMelter expert at StrikoWestofen. “In contrast to normal StrikoMelter systems, BigStruc is able to handle returns with a size of up to 2.5 square meters.” Here the height of the shaft remains unchanged in comparison with standard StrikoMelter systems.

Hot gas baffle and new filling level monitoring system optimize energy consumption.

To be able to guarantee high energy efficiency even at a low bulk density and void volume in the shaft, StrikoWestofen is now using its new hot gas baffle for normal melting operations too. This has often proved its practical worth in StrikoMelter systems as it speeds up the melting-free process before the furnace is cleaned. The baffle keeps the shaft of BigStruc closed after filling and ensures that the heat is used in an optimum way for preheating — regardless of the void volume in the shaft. The preheating and melting of the charge material takes place while the shaft is closed. To ensure that the shaft is filled optimally at all times, StrikoWestofen has integrated a new three-dimensional laser monitoring system. This constantly checks the filling level in the shaft when closed and during filling in order to guarantee that the hot gas baffle closes automatically.

No metal loss without oxygen

To keep the metal loss as low as possible, StrikoWestofen uses further new developments designed to minimize the free oxygen present in the furnace atmosphere: near-stoichiometric combustion and self-sealing lift swing doors. Combustion with minimum excess air prevents corundum formation and ensures low oxidization losses and a high material yield. Of course, BigStruc can also process all material and returns already occurring in the foundries of today. This makes BigStruc the most versatile system in the StrikoMelter series.
Bruker Elemental’s Q2 ION optical emission spectrometer (OES) has been extremely successful for several years in Asia. Bruker took one of its high-end instruments, slimmed it down and presented a powerful, ultra-compact device for PMI, sorting and metals analysis. It caught on quickly and is still a fast seller. Constantly evolving and no bigger than a shoebox, the Q2 ION today performs even better than before.

“We have continuously optimized the basic model of our stationary OES range and were able to expand the matrix selection again,” says Bruker’s Product Manager Hans Dominick. For complex analysis of metal alloys, a non-ferrous matrix is now available to be able to detect the composition of Zamak alloys for the die-cast zinc (ZL0400, ZL0410 and ZL0430) quickly and accurately. However, components of electroplating zinc and many other zinc-based alloys no longer escape Bruker’s ultra-compact emission spectrometer. So the Q2 ION is now also very interesting for enterprises such as zinc foundries, remelters, manufacturers of pipe fittings, galvanizing plants and zinc recyclers.

The Bruker Elemental Q2 ION is customised for other markets as well. In countries outside of Asia, the Q2 ION is known as an easy-to-use system with simple handling, low maintenance, short analysis times and a fast start-up sequence. “The Q2 ION was not designed to provide a low-cost entry-level instrument with many applications,” explains Hans Dominick. “The focus was rather to give our customers a multi-matrix system which works comprehensively and precisely for less complex analytical requirements.”

The accurate analysis of metal alloys in the inspection of incoming goods is a crucial application. Place the sample on the spark stand, press the start button, and read the result — all in a matter of 30 seconds. Whether it’s cold or warm is irrelevant for the analysis quality. Bruker Active Ambient Compensation (AAC) compensates for temperature changes automatically, making complex thermostatic control unnecessary. The Q2 ION is controlled by Bruker’s Elemental Suite software — without keyboard or mouse, just directly by touch-screen.

Analytically calibrations for different matrices are available to fit your specific needs. All important elements and alloy groups are covered by application packages. In addition to the before-mentioned non-ferrous-matrix, the Q2 ION measures, for example, boron and tin in an iron matrix. By default, all alloying elements in steel, aluminium and copper alloys are measurable. The detection capability of UV elements such as carbon, phosphorus and sulfur make the Q2 ION, along with its multi-matrix capability, all-around best in its class. Compact dimensions and low weight ensure easy portability, allowing the unit to be used wherever it is needed. This means inexpensive acquisition and low operating costs.

For more information, contact your nearest IMP Branch, Gauteng TEL: 011 916 5000, KwaZulu Natal TEL: 031 764 2821, Western Cape TEL: 021 852 6133, Eastern Cape TEL: 041 364 2544, Free State TEL: 018 293 3333 or email: info@imp.co.za website: www.imp.co.za

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Simulation as the new platform for real progress in casting technology

Metalcasters that subscribe to simulation software don’t have to wait for a major event to feel the thrill of a new technical development or process breakthrough: over the past decade or so, the expanding scope of process analysis and simulation has meant that every production cycle offers the potential for new discovery. Still, the arrival of MAGMA5 Release 5.3 at GIFA 2015 revealed more generally how simulation software has become not just the means of discovery but the venue in which metalcasting’s most significant industrial development is taking place.

Metalcasters use MAGMA5 software to simulate mold filling, solidification and cooling, in advance of the start of production. More critically, the software improves product design by helping to identify residual stresses and distortion, microstructure formation and property distributions in castings.

The new release raises the emphasis on product and process design by making it possible for foundries to conduct “virtual experimentation and automatic optimization on-screen.”

Process conditions and optimized solutions for casting layouts and part production can be determined before the first casting is produced — e.g., determining runner dimensions, locating gates, placing and sizing feeders and chills — which raises the software’s value as a platform for foundries to identify their potential risks and opportunities.

MAGMA5 5.3 introduces parametric design functions, meaning it’s possible for users to evaluate various casting geometries, and new statistical tools that expand the users’ ability to conduct experimental analysis for casting process optimisation. A new Assessment Perspective speeds and simplifies quantitative comparison of simulation results. “Virtual experimentation and optimisation are thus fully integrated into MAGMA5 for the first time,” according to the software developer.

Among the new process applications of in MAGMA5 5.3 are several options for improving coremaking. The MAGMA C+M module simulates core shooting, gassing and hardening for organic and inorganic cores, and it introduces additional criteria for optimizing corebox layouts and predicting core box wear. In addition, air and sand flows in the coremaking process can be visualised more effectively with tracer particles.

Another Magma revelation at GIFA was the software’s increasing value as a tool for material and metallurgical research, e.g., for new product development. It introduced capabilities for quantitative prediction of as-cast and heat-treated properties in aluminium, cast iron and steel castings. The MAGMAnonferrous and MAGMAiron modules can be used to calculate microstructures and mechanical properties by considering metallurgy, inoculation and alloy composition. Another new development makes it possible to evaluate heat treatment for austempered ductile iron.

MAGMAsteel predicts filling-related sand and reoxidation inclusions, and calculates both macrosegregation and microstructures resulting from heat treatment in steel castings.

A new radiation model tracks heat transfer for investment casting processes, taking into account different radiation conditions and shadowing effects. The MAGMAstress module identifies thermally induced stresses in castings and permanent molds to predict crack problems and distortion in all process steps, including heat treatment and machining.

Simulated distortion results can be evaluated similar to using a CMM, and can be directly compared with real measurements. Creep effects in the cast material during cooling and heat treatment are considered. MAGMAdielife allows evaluating the die life of permanent molds.

Looking forward, Magma’s GIFA presentation made clear that simulation is also a venue for communication, and for education. It demonstrated how the software is a comprehensive and effective tool for training and testing foundry workers and casting designers, as well as for demonstrating capabilities and options for casting consumers. And, Magma introduced its plan to promote a series of seminars to show metalcasting experts how to work with simulation results to maximize the value of process optimisation. The technology may be simulation, but the effects are all very tangible.

For more information contact the local distributors Ametex on TEL: 011 026 6363 or visit the website www.ametex.co.za
Oxford Instruments’ portable arc/spark metal analyser, the PMI-Master Smart is a true portable and full range optical emission spectrometer designed for metal analysis especially in hard to reach places. Despite its 15kg light weight and compact dimensions, the PMI-Master Smart offers full analysis functions and high performance. The powerful rechargeable battery pack and well thought-out transportation concept complement the mobility.

Full analysis functions

Metal analysis, grade identification and sorting — the PMI-Master Smart offers the full range of analysis functions. In comparison to other compact size OES analysers, it offers a wide wavelength range at optimum resolution. The patent pending optics, made of carbon fibre, is the key. Mechanical expansion and tension, triggered by temperature changes and distortion due to change of position are virtually eliminated, guaranteeing stable measuring results. “Our goal was to develop a truly portable metal analyser without compromising on the functions and analysis quality. The PMI-Master Smart even exceeded our own targets,” says Vito Angona, General Manager of Oxford Instruments Analysis GmbH.

Truly cordless

Power connections are typically not available in hard to reach places. Equipped with a rechargeable and optional replacement battery pack the PMI-Master Smart is truly cordless and completely independent from mains supply. The battery pack provides power for the analysis of some hundred samples in ARC and/or SPARK mode, and 7 hours in standby. It also can be operated with the external power supply / charger, with or without battery and even during recharging.

Transportation concepts

The cases for the transportation of the PMI-Master Smart and its accessories easily fit into a car boot. Stacked up they can be dragged with a foldable trolley. For more intensive use a cart, holding a 10l bottle of Argon, probe and all accessories is also available. If you need to climb up to reach the place of analysis, the PMI-Master Smart can safely be carried on the back with the back pack frame.

For further details contact Jaco Le Roux of United Scientific on TEL: 011 795 1900 or visit www.unitedscientific.co.za or www.oxford-instruments.com
The ever growing environmental issues of fumes, odour and waste disposal have focused increased attention on the need to develop a process to reduce the environmental impact of casting production.

The Geopol inorganic binder system, designed to produce moulds and cores, is a sand binder, cured by adding a liquid hardener. The Geopol system is an ester cured, alumino-silicate geo-polymer.

The process differs from traditional sodium silicates in the way that the bond is formed. It forms an amorphous inorganic polymer, which exhibits higher strengths at lower addition levels (typically 2%). This offers improved flowability of sand, which gives it higher mould density to create a higher quality surface finish and breakdown after casting.

The major benefit of the system is its negligible environmental impact. The system does not emit any VOC’s and hazardous air pollution is minimal. With no phenol, formaldehyde or F.A. there are no hazardous leachates and therefore should not be classified as special waste. On casting no visible fume is witnessed. With virtually no odour, low emissions on moulding, casting and shake-out, it is both operator and environmentally friendly.

This system is yet another tool in the foundryman’s toolbox. It is not the system to replace all other binders but has its place, especially for those foundries either wishing, or being forced, to look to more environmentally friendly systems.

There is a large range of esters making the systems highly flexible with bench life of between two and 30 minutes, and managed to provide the best cost and technical benefits.

Higher reclaim levels are possible with the Geopol system with up to 50% possible with mechanical reclamation. When double attrition is available then 70% and even 80% reclaim is possible. In any reclamation system management of the system to avoid fines build up or soda levels going above 0.3% is essential if problems are to be avoided.

Good strip is achieved from good, well maintained patterns. Good shake-out is also achieved in a range of materials from aluminium, cast iron, steels and copper base alloys. Leaded gun metal is a material prone to pin-holing and by changing to Geopol at least two foundries have eliminated pin holes from their LG2/4 alloy castings.

Originating in the Czech Republic, Geopol has been commercially developed by Sand Team, John Winter and Technofond and is now available worldwide, having been proven to transform the working environment in several foundries in Europe, North America, Asia and the Middle East. The binder has been tested in a number of foundries casting ferrous and non-ferrous castings.

For more information contact Metal Sands and Powders Trading on TEL: 082 443 8012 or email rob@msptrading.co.za or visit www.JohnWinter.co.uk

Geopol reclaimable inorganic binder

Hard-faced thermowell for erosive environment

Endress+Hauser have found innovative solutions for harsh and erosive environments in the metal industry.

When working in the metal industry, we constantly deal with extremely harsh and erosive environments. This causes damage to instruments, more often temperature probes. Endress+Hauser South Africa decided to take this challenge and develop a solution to improve the thermowell, which ensures that the instruments last up to 10 times longer than usual.

Temperature measurement proves to be a challenge in the steel making process, not only due to high temperatures of between 400 - 450 °C, but also harsh and very abrasive applications involved in the process of making good quality steel. During the process of producing the steel, its’ extreme importance that the molten metal is at the correct temperature before pouring it into the mould. If not, the final product might have a defect and it also compromises the strength.

Temperature measurement can be used in an application where arc furnaces are used to channel information to the power input controller via the temperature of metal, which can help considerably in saving energy consumption and time.

If you are using or need temperature measurement in applications like roof-top furnaces and rotary kilns etc. where abrasion is a challenge due to high-velocity thermal wind, Endress+Hauser offers a thermowell that can withstand such applications. This solution was offered to one of their key customers where the application was to measure molten ferrous metal where the thermowell had to be exchanged every two weeks due to damage. Once the innovative solution was installed, the lifespan for the thermowell was immediately increased to last over two months.

For further details contact Benjamin Mlangeni, Product Manager Temperature System Components & Registration at Endress+Hauser on TEL: 011 262 8012 or visit www.za.endress.com
The Magaldi Casting Cooler (MCC®) is an automated system for transporting and cooling castings from moulding lines. It may also be used as a workstation for de-gating operations, avoiding further need for a conveyor. Magaldi hot bulk-material handling systems are installed in power plants, cement manufacturing, and mining and metallurgical operations. Designed for reliability and to increase productivity, the MCC is able to work in typical foundry conditions that include high temperatures, heavy loads, abrasive media, or sharp castings.

The Magaldi Casting Cooler is equipped with a cooling tunnel, held under negative pressure, in which a stream of cooling air flows at controlled speed to avoid thermal shocks to the castings. Ambient air is forced to enter the extremities of the cooling hood then sucked from the centre of the hood itself. The cooling tunnel is provided with a set of optical pyrometers for casting temperature detection at different points along the transportation (inlet, middle and outlet of the tunnel).

Downstream from the cooling tunnel, an uncovered section of the MCC allows operators to comfortably degate the cooled castings and to sort the sprues by sliding them down and out, without noise and vibration, thanks to the conveyor’s low speed and available large flat work surface (if required). The cooled and de-gated castings are then conveyed to the shot-blasting machine.

The Magaldi Casting Cooler overcomes the limitations of cooling drums, vibrating coolers, or carousels that may be subject to maintenance (and thus, loss of production time) thanks to the dependable Magaldi Superbelt technology and a fully automatic castings cooling process suitable for high volume production.

The Magaldi Superbelt is designed to withstand high mechanical impact caused by heavy castings (hundreds of kilograms) and shock loads generated by hammers, air cannons, or manipulators during sprue removal. It can be arranged with slopes up to 35° to transport materials such as castings, sprues, scraps and crop ends. The multilink Superbelt technology, specifically designed with no chains and sprockets, minimises the risk of sudden failures, and ensures a dependable and safe operation.

Machine wear also is minimal, because the material is slowly conveyed with no relative motion against steel pans. Maintenance is very easy, according to the machine builder, which adds that in most cases the steel belt operating life exceeds 10 years.

The MCC also includes the Magaldi Integrated Supervision System (MISS®). Linked to moulding line operation signals, the MISS receives the identification number (ID) of each casting from the moulding line along with the actual casting temperatures. Depending on these parameters, the MISS automatically adjusts the MCC belt speed and the cooling-air flow rate, thus maximising foundry productivity.

The MCC can be implemented in new projects or retrofitted to molding lines already installed, including customised installations.

For more information contact the local representative Helium Process Technologies on TEL: 082 552 9673 or visit the website www.magaldi.com
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Novanol 165

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SI Group unveils global brand transformation
New logo aligns with dynamic corporate strategy

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