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volume 14 number 5

FEBRUARY 2014



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

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EDITOR'S COMMENT

The future workforce should not be so demanding



World peace - The end of hunger - The education of our children and the future workforce - The continuing betterment of our employees, our businesses and ourselves. Who in their right mind wouldn't find all of the above to be worthy pursuits and grand goals for society as a whole and the foundry industry in particular?

A story further on in the magazine covers the imminent retirement of one of the well known, jovial and hard working foundrymen in our industry – John Bryson. His 'obituary', as I joked with him, highlights various aspects of his journey. But more importantly it highlights his experience of being mentored and furthering his education. All industries need candidates to take over from these 'old bullets' as they slowly leave our industry. The knowledge and experience in an industry is built up over time and cannot be fast tracked. Achieving these goals requires not only a coordinated commitment to education and research programs from the engineering, science, and technology sectors, but also requires an effective networking of these academic and industrial concerns for a qualified work force. Continuing education can achieve these goals but it also needs the commitment from the workforce if an individual is to better his/her standing in life.

John certainly did benefit. "I was mentored by two colleagues and they encouraged me to start studying again and I thank them for doing so. This paid dividends as I became the youngest Section Manager and the rest is history."

The SAIF and its partners have successfully set up the Gauteng Foundry Training Centre, just one of many initiatives that have been implemented to tackle the need for skills development and education in the foundry industry. Twenty apprentices started their training at the GFTC in January 2014.

The apprenticeship programmes consist of the three components – melter, moulder and patternmaker, which will be presented over a period of 12 months each. In order to qualify the students will have to pass all the modules, which will include knowledge, practical and workplace skills pertaining to each trade. The pilot group of 2014 students selected will have their course fee sponsored by the MerSETA. Students will also receive a stipend during their work experience phase to be conducted at foundries.

However I have reliably learnt that, despite having their course fees sponsored, they (the 20 students) were unhappy that they would not receive a stipend while studying, only during their work experience phase. I know the amount of money being demanded every month is relatively small, but this did not change the fact that I was left speechless. We all know what it costs these days for tertiary education and the amount of applicants far outstrips the positions available. But if this is what our youth, or should I say these chosen few and not generalise, have stooped to then we have major problems ahead. The demands are only going to get bigger and ultimately make companies less profitable and the country uncompetitive, if it isn't already!



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Adapting and growing over a 30 year period

Endeco remains in the forefront of the local foundry industry.



“Only the fittest survive might be an old cliché but in the case of Endeco I truly believe that it applies. However being a survivor encapsulates a number of dimensions and dynamics and does not rely on luck. Our industry is full of hard-working, dedicated, engaged people. This certainly describes Endeco as I reflect back on the past 30 years of the company,” said Luis Dias, CEO of Endeco cc and Past President of the South African Institute of Foundrymen.

“Adapting and growing in an ever changing environment has never been more important than in the recent history of the company. I remember back in the 1980s, when we started the company, there were probably close to 800 foundries operating in South Africa at the time. This number dropped down to 400 in the nineties and has dropped by another 50 percent subsequently. Fortunately this number has stabilized since the turn of the century otherwise it would spell disaster for industry in general in South Africa, not just the foundry industry,” continued Dias.

“There are a number of reasons you could give for this dramatic drop in numbers. The single most contributing factor however, has been our exposure to the outside world.

We no longer operate in isolation thank goodness. The advancement in technology and manufacturing, let alone in our general lifestyle, has been incredible. Sometimes it is hard to keep up."

"Those that have recognised this and adapted their businesses to meet the challenges will continue to survive. I cite our business for example. I have always been the draughtsman and in the past I would spend hours on my drawing board designing and formulating plans. Technical drawings are essential for communicating ideas in industry and engineering and ultimately you would produce the final plans. With the advent of computers and high-end software today, the mechanics of the drafting task have largely been automated and accelerated through the use of computer-aided drawing systems (CAD). My son Victor, who joined the business in 1999 as a junior engineer, went on CAD courses and today we marvel at how quickly we can produce a layout, adapt or alter it and then produce final plans. When I started out I could never envisage that we would operate so efficiently in this department."

"This might be one small example but I have always encouraged the local foundry to adopt the same outlook – to invest in new and high-tech equipment that make their operations more cost effective. For years there was not much investment that took place in foundries and it was probably a contributing factor to the drop in numbers. It was probably accentuated by the view of the prophets of doom and some consultants."

"However our success in the past year proves that this perception is wrong. In fact I have been very encouraged by the commitment of foundry owners in recent years. In all my time in the industry I have never seen so much investment in capital equipment take place. By and large our industry is keeping up-to-date with the rest of the world. South African foundry engineers, suppliers and manufacturers are up to any challenge and will provide innovative and cost effective solutions. We are more than capable of undertaking projects, large or small, to keep our foundry industry moving into the future."

Participating actively

"Nevertheless the advancement of our industry does not stop at capital equipment investment. Together, metalcasters and suppliers can continue to plant the seeds for our companies' and industry's enduring sustainability, by our continued active participation in associations such as the South African Institute of Foundrymen. We are an industry of alliances and friends ... foundry-to-foundry, foundry to supplier, and supplier to supplier. We rely on each other."

About Endeco

Through the development of locally designed and tested equipment and the policy of continually introducing new equipment, this has enabled the company to remain in the forefront of the industry, and essentially assist foundries in import replacement. An added benefit today for foundries is that Endeco are also prepared to handle all the civil engineering aspects that are involved in installing equipment.

The range of sand plant and equipment that Endeco designs and manufactures consists of all the necessary equipment used in both green sand and chemical bonded sand projects, from a small ferrous or non-ferrous foundry to the largest semi-automatic or automatic complex, and for virtually any type, size, quality or quantity of casting. The equipment includes reclamation plant, continuous and batch mixers, rotary drums, cooler classifiers, conveying systems, compaction tables, vibrating feeders and shake-outs, rollover

units, rotary screens, aerators, weighing devices and additive screw feeders.

Additional equipment that Endeco has designed and manufactured includes chromite sand separators, ladles, bucket elevators, dust extractors, moulding boxes, pneumatic conveying systems, degassing units, silos, a mono rail system, spincasting equipment, rotary sand dryers and mould drying and coating units.

Initially Endeco outsourced all the fabrication work but since the purchase of their premises in Alberton, Gauteng 19 years ago, all the manufacturing has been done in-house.

Endeco is not a consultancy to the foundry industry but offers an experienced project service with enthusiastic control from concept to commissioning of modern foundry plants engineered to the highest standards.

Endeco has established a reputation as a main contractor able to design, procure, manufacture, supply, install, commission and project manage a foundry plant and project. Every contract is rigidly programmed and progressed through regular client/contractor co-operation. Endeco has a long and proud reputation of being "on time".

For more information contact Endeco cc on TEL: 907 1785 or visit www.endeco.co.za



Viking Foundry

casts large, difficult impeller

There's an element of art in every casting, but what is often overlooked is that there is an impressive degree of technical proficiency at work in the numerous castings made in foundries.

Ingenuity and new technological advancements are transforming today's metalcasting industry which has become innovative, high-tech, challenging, clean, and safe. Multiple processes have been developed in the industry where each process is specific to the metal used and the results desired. Within each process there are several variables that impact the design of final product. Today, castings are used in a number of markets in a variety of applications that range from manufacturing to home decor.

The diverse range of casting alloys and their flexibility offers the selection of most economical materials to fulfill the prerequisites of a specific application. Every single alloy has particular physical and mechanical characteristics, as well as its own casting properties, machinability, weldability, corrosion resistance, heat treatment properties, and other characteristics.

The metalcasting process today has become integral to the manufacturing industry and can be used to create complex geometric parts with relative ease, irrespective of the size of the part. Cast metal products are found in 90% of manufactured goods and equipment including critical components for cars and aircraft to home appliances and surgical equipment. Also, the process is very economical and generates little waste, which can be reheated and used again.

However sometimes it is the creativity and skill of an experienced foundryman that is needed to make one appreciate the ingenuity of metalcasting.

Last year Viking Foundry was tasked to cast an impeller for APE Pumps, part of a centrifugal water pump that is in operation at a local power station. So what you might say - these are everyday castings! In this case though a number of foundries had tried to manufacture the casting and had not succeeded - reasons not given.

Impellers come in various sizes and are used in a variety of applications and generally in harsh conditions, so this has to

be taken into account. The material used in this instance was stainless steel CA15. The dimensions and the order for two-off is what was critical though.

Gross weight of the casting was 3 250 kilograms with a final nett weight of 2 180 kilograms. The casting had a diameter of 1650 mm and a height of 1200 mm with a vane thickness of 50 mm, a heavy centre boss and outer wall thickness of 110 mm.

Viking Foundry also manufactured the back covers, which work in conjunction with the impeller.

"Making the first mould and core assembly took us over a week and kept the team scratching their heads," said Greg Estman, Production Director at Viking Foundry.

"However it was the experience of the team that made it work. Consequently the second casting was complete cast from start to finish in four working days and as a result of the quality that we achieved we are now in line to receive more orders," continued Estman.

"With casting capabilities of over six tons in iron it's not Viking Foundry's biggest casting or most complex one but it is our most expensive casting ever in terms of the value of the metal used in one melt."

"Viking manufactures various impellers of different sizes and materials on a day to day basis so

the concept was nothing new. But this one was special because of its size, even with all the years of experience that our staff have in the foundry industry. The size certainly gave the guys a challenge."

"Starting at the pattern shop the Viking team, including the methods men, moulders, melting and fettling all put their best effort into ensuring a near perfect casting. From ceramic pipes to special sleeves there was no costs spared in producing the impellers."

For further details contact Viking Foundry on TEL: 011 873 5093 or visit www.vikingfndy.co.za



Last year Viking Foundry was tasked to cast an impeller for APE Pumps, part of a centrifugal water pump that is in operation at a local power station. The large and difficult impeller was cast in stainless steel CA15. Gross weight of the casting was 3 250 kilograms with a final nett weight of 2 180 kilograms. The casting had a diameter of 1650 mm and a height of 1200 mm with a vane thickness of 50 mm, a heavy centre boss and outer wall thickness of 110 mm

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Castings SA

launches its own website

Visit www.castings.co.za and see how you can reach a wider market!

The Castings SA publication has been extended to the web with the launch of its own dedicated website (www.castings.co.za) where you will find many more exciting features. The website includes the latest issue and archives of the publication in both digital and PDF format to download, news, industry events, international and local exhibitions, international and local associations and contacts, with links and contact details provided for you to research further.

The Castings SA website is packed with information that you need at your finger tips, is interactive and easy to negotiate. Large high quality pictures, that download in seconds, are a feature of the website.

For the last 14 years the Castings SA magazine has built a reputation in the market whereby it actively introduces prospects to information and products they need to know about while at the same time building brand impression and recognition. It is known in marketing terms as 'Push Media' and still dominates. Readers turn to Castings SA to learn about things they did not know.

Why building your brand in print matters

Throughout the industrial buying cycle, brand recognition and brand reputation is critical; particularly during the research and consideration phases. Brand is the first factor used by industrial buyers when evaluating and compiling a list of prospective suppliers. Prospects have immediate requirements, and are actively seeking solutions.

Why extending your brand online matters

With the prospect now in control of the information gathering process, Pull Media becomes most important. Brand is a primary influence on where and at whom they look. However Pull Media provides prospects with information they need, but are not sure where to find it.

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

www.castings.co.za puts your company in front of

prospective buyers at a time when they are looking for the specific solutions you offer.

Online advertising opportunities

Extend your brand and put your message in context and receive the actionable results needed to grow sales while expanding your brand's digital presence. There are number of banner advertising opportunities - Home Page, Front Pages and Sub Pages - where your company logo can appear. Once a viewer clicks on your banner they will immediately be redirected to your own Home Page, which will be hosted on the Castings SA website. Your Home Page will consist of your company logo, full contact details including your website address and any other addresses of companies that your company is linked to, a Company Profile and pictures of the products that you sell or manufacture.

Other opportunities

Castings SA Online will give coverage of all the latest events, open houses, demonstrations, discussions, seminars and more. It will keep you up-to-date with vital industry developments. Whether lowering the cost of production with innovative new equipment or hearing first-hand from experts about solving measurement challenges, Castings SA Online will ensure that prospects are always informed about the events vital to your business. Take advantage of reaching these prospects by being part of Castings SA Online.

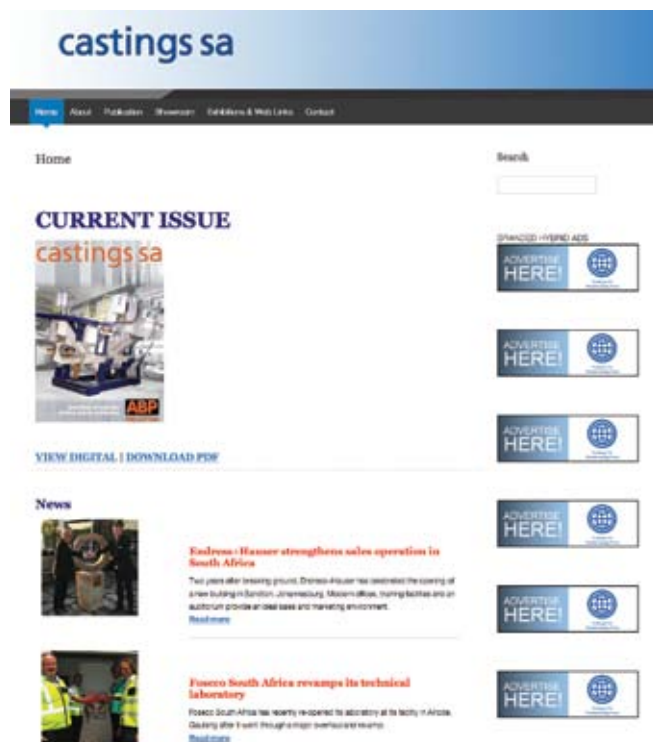
Job market

Too many times we hear gripes of "I cannot find the right person", or "I advertise in the local newspaper and my inbox is flooded with emails from the wrong applicants", or "the recruitment agency does not understand my business and wastes my time with sending the wrong applicants".

Castings SA Online is a platform for you that is dedicated to finding someone suited to your business, whether it is a designer, machine minder, foundryman, tool & die maker, applications engineer or a sales manager in the niche area of metalworking. Contact us and we will list your advertisement.

Supplier activities and services listings

These sections will list a comprehensive collection of companies that supply and service the various activity



headings listed on the website. These headings include: Alloys & Metals, Consumables, Environment, Health & Safety, Heat Treating, Information Technology, Material Handling & Robotics, Melting & Refractories, Mould & Core Making, Plant Engineering, Pouring & Filtering, Rapid Prototyping, Sand, Binders & Preparation Equipment, Shakeout, Cleaning & Finishing, Systems & Software and Testing, Measurement & Quality.

For those companies that advertise with a banner advert a link will be provided to your own Home Page, which will be hosted on the Castings SA website. Your Home Page will consist of your company logo, full contact details including

fill up that capacity on your machines that you have always wanted to do.

In these sections you may search or browse for specific information pertaining to the relevant heading, based upon your need. However you will have to return regularly to stay updated with the new listings.

Castings SA is part of the Crawford Publications (www.crawfordpublications.co.za) stable, which includes Metalworking News (www.metalworkingnews.co.za), a business to business publication dedicated to the metalworking industry. Crawford Publications brands are distributed to decision makers – owners, management

Online research is a key part of the industrial buying cycle, particularly during the consideration and selection stages. Castings SA Online is where buyers search, research and learn about new product technology and new process innovations

your website address and any other addresses of companies that your company is linked to, a Company Profile and pictures of the products that you sell or manufacture.

Foundry listings

With its endeavour to actively introduce prospects to information and products they need to know while at the same time building brand impression and recognition, the Castings SA website will also provide a platform for engineering companies involved in metalcasting and services related to the industry, to share their capabilities with potential buyers. Connect with the outside world and

and senior employees that are involved in decision making, buying and manufacturing – working in metalworking and metalcasting facilities of all sizes – from small job shops to OEMs and component manufacturers. They provide suppliers, foundries, job shops, service centres and industry related companies a variety of opportunities to advertise.

Full details on the Castings SA publication and to see how you can reach a wider market via the Castings SA website can be found on www.castingsa.co.za or contact the publishers directly on TEL: 011 463 0489 or email online@engnews.co.za

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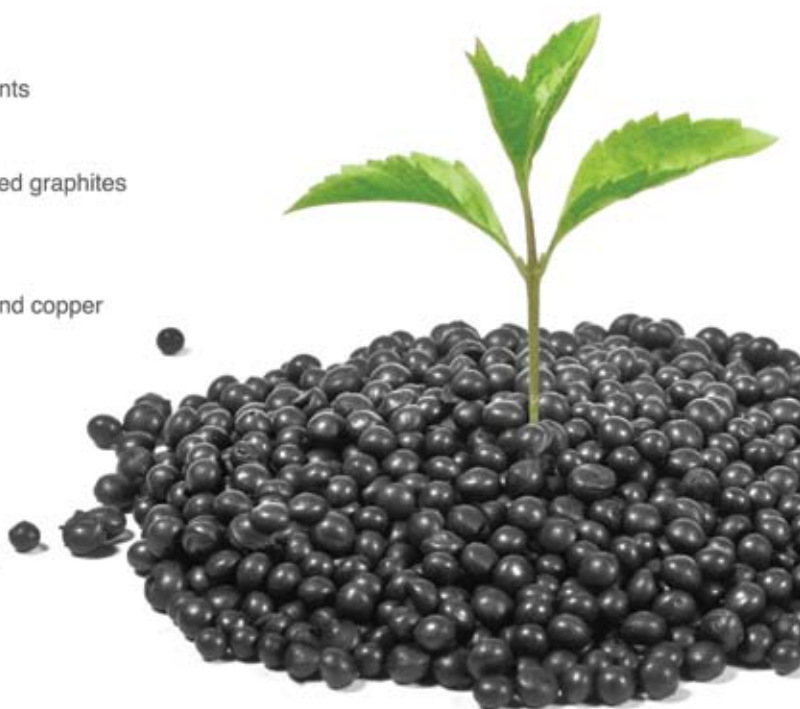
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- / Competitive prices



Local scrap industry feels the squeeze

However the consumers of scrap metal claim that the problem arises from the scrap dealers' lack of co-operation.

Neither merchants nor consumers have benefited from the new restrictions on scrap exports. This is according to a report published in the Mail & Guardian by Lisa Steyn, a business reporter at the newspaper. The full report follows.

Restrictions on the export of waste and scrap metal, which require dealers first to offer scrap to local consumers at a 20% discount before being granted an export permit, have caused unhappiness among dealers and consumers.

The restrictions have done little to bring down the price of input costs for buyers – foundries, mills and secondary scrap processors – while tons of waste metals pile up in scrapyards across the country.

Abeddac Metals is one such scrap yard spilling over with waste. Trucks line the street in an industrial suburb of Boksburg as waste goods are continually delivered.

Company director Benjy Jassinowsky said his floor has never been so full – and that is not a good thing.

On a normal day, seven or eight containers of scrap will leave Abeddac bound for the coast for export, but since restrictions on exports have come into effect almost nothing has left the crammed yard, Jassinowsky said.

Many scrap merchants, like Abeddac, claim their businesses have come to a virtual standstill.

Restrictions come into full effect

The restrictions on all metals came into full effect in September 2013 in an effort to clamp down on ferrous and nonferrous scrap metal leaving the country.

The gazetted guidelines stipulate that "scrap metal will be allowed to be exported only if the scrap metal concerned was offered to domestic consumers at a price that is 20% below international spot prices for the published types and grades of scrap metal".

According to the International Trade Administration Commission of South Africa (Itac), export permit applications for the exportation of controlled waste and scrap metals are circulated to industry twice weekly, and local buyers have 15 days to make an offer to purchase the relevant scrap metal.

If it is not bought, then Itac will issue an export permit within three days.

"At the moment everybody is unhappy with the current system. It's not working – bottom line," said John Davies, chief executive of the South African Institute of Foundrymen.

Scrap dealers like Jassinowsky who have struggled to reach agreements with local buyers claim to have faced longer waiting periods for export permits, especially because of the December break.

Bernard Maguire, a Metal Recyclers Association of South Africa (MRA) executive member, said some permits have been rejected for "silly reasons" such as wording or a new application form that many suppliers were not aware of.

Unprofessional attitude

In the meantime, "that stock has got to sit. It's a commodity and it is affected by commodity markets. The attitude is really unprofessional at the moment."

Angelo Solimene, chief executive of Group Wreck International Non-ferrous, said some local buyers are just objecting to applications for the sake of objecting.

"They will object to my permit, [but] they don't give me payment terms. And they don't come and collect ... I will only supply someone if I know who they are and they pay me on time."

Solimene said this means his company, located 7km from the Durban harbour, may have to transport loads up to Johannesburg or further.

As a result of the inability to reach an agreement with local buyers, Solimene said receiving export permits has been slow.

"We are just waiting. Yesterday I had to sell my material at R4 cheaper [a kilogram] to my opposition because he got a permit."

Lack of co-operation

Local buyers, however, say the problem arises from scrap dealers' lack of co-operation.

"The problem is the scrap metal merchants blatantly refuse to sell at the preferential price or anywhere near the preferential price. You are forced to pay whatever [they] want to sell it for," said Bob Stone, chairperson of the Non-ferrous Metals Industry Association, who is also vice-chair of the Aluminium Federation of South Africa.

"All of the scrap metal merchants are not applying the policy – have they all colluded to not abide by it?"

He said that although, technically, a consumer should be able to purchase at the listed preferential price outlined by the government, "to my knowledge there is not one kilogram of any metal that has been sold by any scrap metal merchant at that price".

Stone said some merchants are applying for export permits using 20 different addresses, with very small quantities at each address.

This, according to Davies, makes matters of inspection and transportation more difficult.

Negotiations further complicated

Dealers, however, argue it is not worth the time and expense



to move the goods without knowing whether a deal will be struck or not.

Davies said negotiations are being further complicated by some of the scrap metal merchants wanting local buyers to provide a copy of three years' worth of financials, surety signed by all of the directors or a confirmed letter that the price offered is the same as that offered to all merchants.

Jassinowsky, whose company trades in nonferrous metals, said the pricing system is anti-competitive and inhibits free trade. "Why should I be forced to sell at a loss? I'd rather close the business down."

But Stone questioned how scrap metal merchants not abiding by or applying new policy can claim it is detrimental when they have not even tried to follow the guidelines. He said dealers stand to benefit the most from the new system.

"If the merchant sells at the preferential price, that means he has to buy at a cheaper price. But he only exports half of what he buys. He is then earning a hell of a lot more, because he bought it cheaper."

Those losing out, he said, are the generators of the scrap. Donovan Korff, a partner at Cobra Metals, a small-scale scrap dealer in Johannesburg that sells to Abbedac, said revenue has halved as a result of the new restrictions.

"No delay" in processing applications

"Those supplying to the companies who are getting permits, they are offering more for copper than we can offer for it. We can't even buy that much because we don't know what we are going to do with it yet."

Marius Collins, Itac's manager of import and export control, said there is "no delay" and "no backlog" in processing applications.

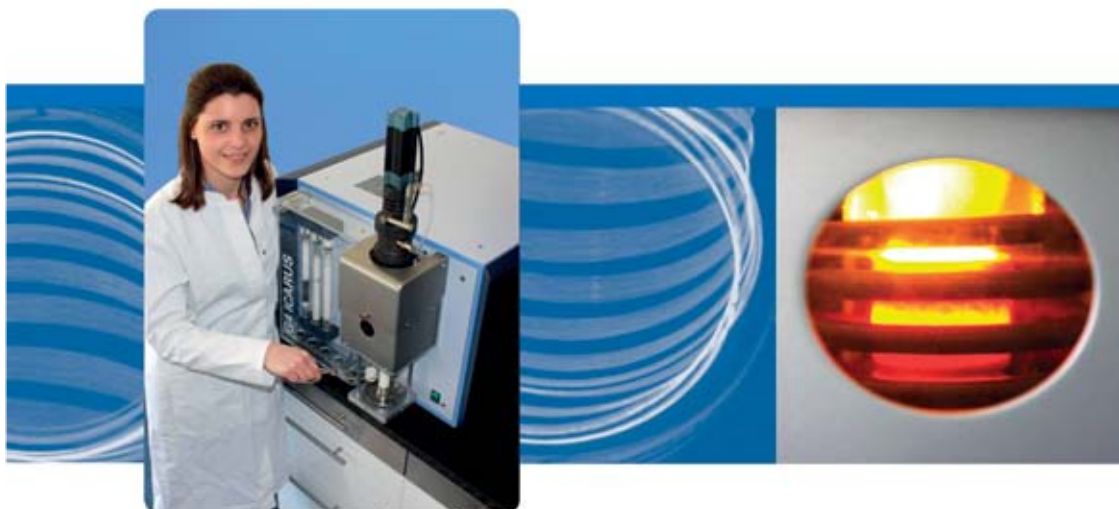
"Given that this is a new and additional responsibility, Itac hired extra administrative staff for its import and export control unit, which currently administers the

system," said Collins.

Davies said: "I'm disappointed because at the same time [that the restrictions were drawn up] we were in discussions with Busa [Business Unity South Africa] and the MRA to find a solution; we were virtually at the stage where we had completed the investigation and had proposals ready to be tabled."

A legal bid to have the new policy changed was lodged by the MRA last year. The first part of its application was lost while the second is scheduled for March. The SA Metal Group has also launched a court challenge. ■

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Local foundry industry in dire straits

The South African foundry industry is at a crossroads according to the Scaw Metals Group. Not only is the industry suffering from the effects of a depressed market, but uncompetitive local raw material costs are threatening the future of the industry.

According to the Industrial Structures and Skills in the Metals Beneficiation Sector of South Africa report, the number of foundries has dwindled over the past couple of years. In the 1980s, foundry numbers dropped to around 450. In 2003 that number plummeted to just over 200. Between 2007 and 2011, the number fell by 13% and the employment figure in the industry fell by 30% over the same period.

Ufikile Khumalo, Executive Chairman of the Scaw Metals Group says the industry is in real trouble. "The local industry is in real trouble. Due to the continuing poor local demand experienced over the last couple of years, the remaining players in the industry have not invested in the required capital equipment and new technologies."

Not only is the increasing input cost of raw materials like scrap metal to blame for the industry's current dilemma, but the annual hike in electricity costs, poor and inconsistent local demand for foundry products and rising imports are all contributing factors.

"Scrap metal is the key raw material ingredient in the foundry industry. Competitive scrap metal pricing has the potential to reignite the local foundry industry. We regard the conversion of scrap metal into secondary metal products a priority against simply exporting a key resource such as scrap metal," says Khumalo.

"The lack of skilled labour has also been labelled by Khumalo as being a concerning issue for the local industry. "New training for the employees of foundries has not been prioritised by local companies, which has resulted in the foundries generally having an ageing workforce," says Khumalo.

Khumalo says that the only way for the local industry to get back on its feet is by the help of the South African government.



welcomed the proposed intervention," says Khumalo.

The local industry must make use of state procurement and funding by key parastatals, which will help support the existing foundry capacity and to invest in new technologies by channelling a large proportion of orders to local existing industries.

The Scaw Metals Group has put plans in place and acquired enough funds to expand its existing capacity and improve on its efficiencies.

"Scaw also has access to the latest technologies through long-standing partnerships with reputable international companies that supply the international foundry market. Scaw believes it can compete with international companies both on quality and price if new volumes are placed, which will make investment economically viable," says Khumalo.

"Scrap metal is the key raw material ingredient in the foundry industry. Competitive scrap metal pricing has the potential to reignite the local foundry industry. We regard the conversion of scrap metal into secondary metal products a priority against simply exporting a key resource such as scrap metal," says Khumalo, Executive Chairman of the Scaw Metals Group

The Department of Trade and Industry and the Department of Economic Development must implement the required measures, in a coordinated effort to support the foundries.

"Such measures can and should be both from the supply and demand side. These crucial interventions would yield benefits such as local ownership, skills development, job creation, job preservation and the increased beneficiation of our abundant raw materials," says Khumalo.

The South African government has already started with some interventions in this regard, namely the policy directive related to limiting the export of ferrous and nonferrous scrap.

"This will assist local foundries to have access to scrap at better prices. The jury is still out on how the metal recycling industry will respond in terms of logistical issues as the matter has not been welcomed by the local recycling industry. The primary and secondary steel producers, however, have all

According to a 2013 report by the South African Institute of Foundrymen, local foundries are one of the most important role players as far as GDP is concerned. Foundries contribute R9 048 billion per annum to the South African GDP. Its eventual closure through policy neglect will severely impact the South African Economy.

"The study confirms clearly that an intervention by government to optimise the foundry and scrap metal industry in South Africa is needed and will be far more beneficial than a policy of "doing nothing", allowing the current status quo to persist. Despite the need to sustain the foundry industry and the related downstream industries involved, such as the expanding automotive industry which is a key user of metal products, among others, the output and employment of the foundry industry within the metal industry have steadily declined over the past few decades," the report read. ■

Scaw Metals Group to construct grinding media plant in Ghana

South African manufacturer, the Scaw Metals Group, will construct a new grinding media plant in Tema, Ghana. This new plant seeks to significantly increase the company's grinding media capacity on the African continent. This move, valued at more than US\$40 million, is done in partnership with the Guma Group, a South African player, as well as the Jospong Group of Companies, which is based in Ghana.

"We are delighted that we will be opening a plant in Ghana and this is outbound investment for a South African entity. The Ghanaian government has made a great push for the local manufacturing industry to stimulate economic growth and provide job creation," says Markus Hannemann, Chief Executive of the Scaw Metals Group.

The Scaw Metals Group already has a presence in Ghana. The company's Ghanaian operation was registered in 2011 as a regional sales office to service the West African region. With offices in Tema, Scaw Ghana functions as a local point of contact for all of the products manufactured in South Africa by the Scaw Metals Group that may be in demand in the region.

"From our experience in Ghana thus far, we are certain that we will be able to fully utilise the vast potential in the region. The skills development we will be providing for the employees of the plant will make sure that our plant will have world-class standards and have a significant knock-on effect in the local community," says Hannemann.

The consortium, which holds 30 percent of the entity, will be given first preference to supply products and services during construction and thereafter. "We are looking forward to the partnership with the Scaw Metals Group and supplying the region will grow the business further. We will also look for other steel beneficiation opportunities in Ghana", says, Joseph Siaw Agyepong, Chairman, Jospong Group of companies.

The Guma Group is a Pan-African, black owned multi-disciplinary investment company with operations globally and across the African continent, employing over 12,000 staff members and focusing in energy power generation, ICT, infrastructure development, tourism, property real estate and shopping centre development.

"Our investment showcases the value that partnerships between the private and public sector can bring to infrastructure development in Africa. This plant serves as a catalyst for the further enhancement of business to business relationships, which is much needed for job creation and trade in the region", says Robert Gumede, Chairman of the Guma Group.

The consortium will bring additional investment to Ghana by increasing the steel product range, through a company which will produce other steel related products including Rolled Products (long steel products, reinforcing bars, low and high-carbon wired rods, reinforcing coil, etc.)

The Scaw Metals Group is the leading producer of forged grinding media in Africa. Demand for forged grinding media comes predominantly from the gold and copper industries. The forged plant operates three production lines and sources input bar stock directly from Scaw Rolled Products. ■

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John Bryson escapes into retirement



John Bryson, Foundry Director at Kimberley Engineering Works (KEW Foundries), has announced that he will be retiring at the end of February 2014.

"After more than 47 years in the steel and foundry business I have decided that the time is right to retire. I leave KEW Foundries knowing that my fellow directors and future management teams will follow the successful course we have charted. It has been a privilege to have been a part of the industry for so many years and to work with its many dedicated employees," said Bryson.

Bryson has been associated with KEW Foundries since joining the company in 2000 as Foundry Manager and has been the Foundry Director since 2007 after a MBO.

Bryson recalls his love affair with Africa and its wonders, in particular Southern Africa.

"I arrived for a holiday in what was then known as Lourenco Marques in June 1967, at the age of 18 and single. My adventure began when we flew across in a Bristol Britannia (a British medium-to-long-range airliner built by the Bristol Aeroplane Company), from Glasgow, Scotland where I was born. This trip took us 36 hours and we stopped at Basle in Switzerland and Nairobi, Kenya on the way down. I loved it so much that I decided to settle in Africa and I have never been back to Scotland. What is remarkable is that I have only left Africa once since arriving. That was in 2011 when I visited the GIFA exhibition in Dusseldorf, Germany."

"After a short stay in Mozambique I then moved on to visit my parents who were living in what was then Rhodesia. My trip took me via the Kruger National Park. I entered the park via the Crocodile Bridge gate and, who would have thought that 47 years later I would be retiring to a home not 10 minutes away from that gate."

"My working career began at the Lead & Zinc mine in Broken Hill, Northern Rhodesia where I worked for six years. I then moved onto Orapa Diamond Mine in Botswana followed by a gold mine in Southern Rhodesia. I even staked my own claim but in those days the mines inspector checked that you had worked your claim at least 1"0" per year, but with too many other distractions for a young man I found this to be rather difficult."

"Life was full of exciting adventures at that time with very little stress. I remember flying to Wankie Colliery for an interview. When we landed I found myself in the middle of the game park. There I was sitting on my suitcase reading a Dennis Wheatley novel with a herd of elephants around me. Thankfully a ranger gave me a lift to the main road from where I hitched a lift to the colliery for the interview."

"On another occasion I found myself, one Friday, in the front of a 'shoe shine bus', as they were referred to, on my way to Mashaba mine, Zimbabwe. The bus was split up according to your skin colour and the whites sat in a compartment in the front of the bus."

"I was on my way for an interview and was offered the position and told to return on the Monday to start work. Before leaving I was asked what was wrong because they had noticed I was very agitated. I explained that I had no money. The managers kindly booked me into the single quarters and gave me credit for the club so that I could eat and have a few beers until my first pay cheque. That was the closest I came to being absolutely broke."

"Before leaving Scotland I had been studying production engineering but these studies came to an abrupt halt. There was nothing like the internet or even correspondence courses then. For six years I did not even contemplate furthering my education because I thought to myself why would you need a qualification with what the mines paid in those days?"

"However in 1973 I joined RISCO (Rhodesia Iron & Steel Company - now known as ZISCO) where I was mentored by such people as George Mitchell, now the owner of Geometric Intertrade and Malcolm Sanderson, our chief training officer at that time. Both of them encouraged me to start studying again and I thank them for doing so. This paid dividends as I became the youngest Section Manager at RISCO and went on to lecture part time in steel making and casting practice for The City and Guilds of London Institute."

"Whilst still in Rhodesia I also did national service terms in the security forces, over a period of 10 years."

"My stay in that part of Africa came to an end in 1982 when I decided to move to South Africa. I had a young family to educate and did not see a future in the country. I accepted

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a position at Apex Foundry, Esethebe, KwaZulu Natal as a Production Metallurgist. I was then transferred to Lennings Manganese (now Metso Minerals) as Quality Assurance Manager where I was instrumental in obtaining ISO9001 (SABS0157 in those days) accreditation for the foundry.”

“In 1992 I decided to upheave the family again when I was approached by Dimbaza Foundry, who were in need of ISO9001 accreditation, and I accepted their offer to move to the Eastern Cape where they were located.”

“I had eight wonderful years at Dimbaza but unfortunately became involved in company politics, an area in which I never shined, so the Ozz Group thought it best that I leave and that is when I moved to KEW.”

“Those that visited us at Dimbaza Foundry will not forget our meetings, especially after work at the Zama Zama. After a few hours of socialising there was no problem too big for us to solve. The truth is I learnt a lot in discussion with fellow workers and suppliers from all the supporting industries.”

“I arrived at KEW Foundries as Foundry Manager in 2000 where I was involved in a management buy-out in 2007 when previous owner George Lodder reached retirement age. I like to believe that I have played my part in the MBO team that has taken KEW Foundries to a different level. Since 2007 we have increased sales by 319% and the value of the company has increased by a staggering 12 times. I am sure that with the present team, plus the addition of Wilma Buys as the Technical Manager and Robert Bezuidenhout as the Foundry Manager, KEW Foundries will continue to grow.”

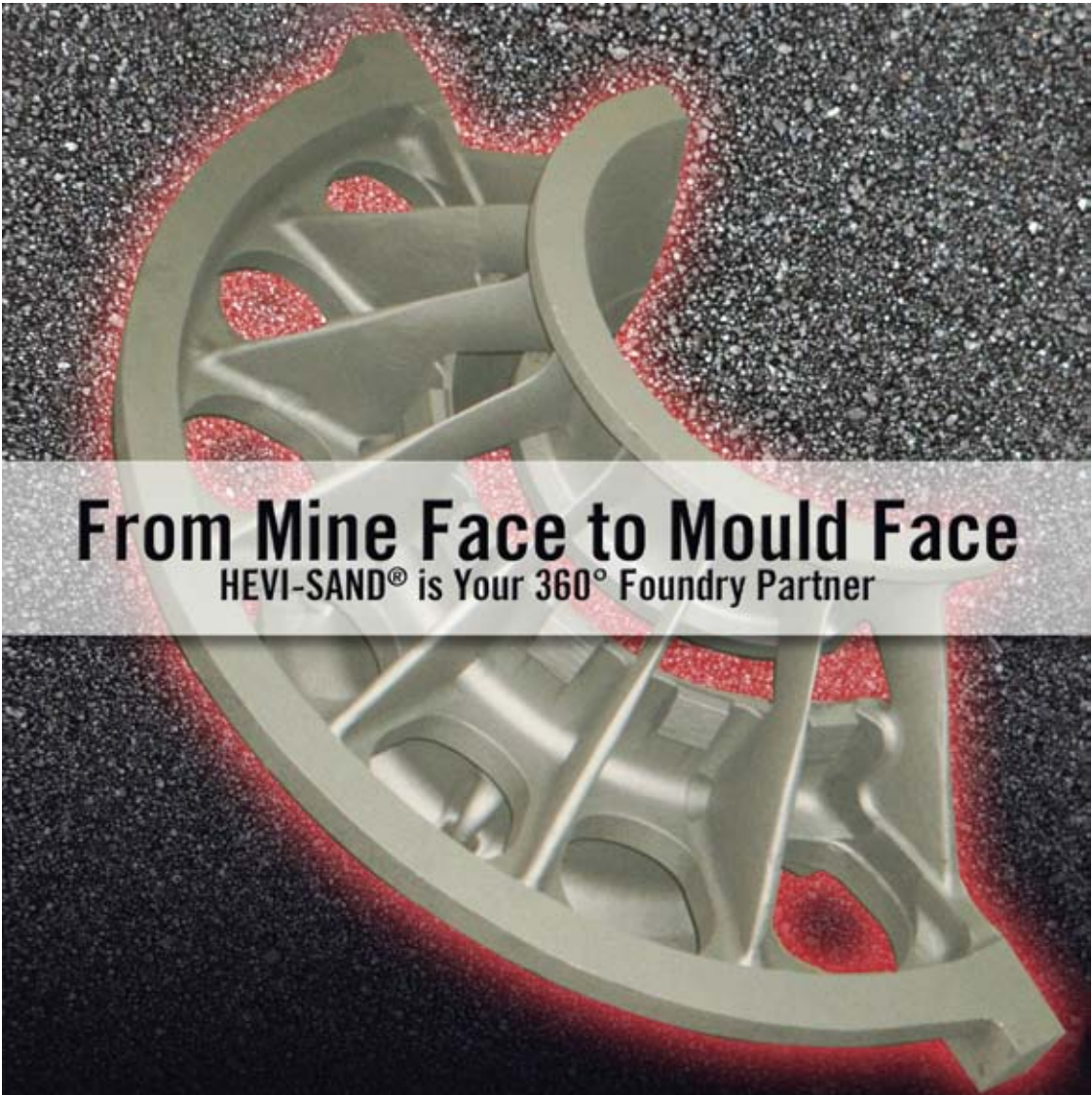
“I have had a happy and successful life in the steel and foundry industry. To what I attribute it is simple, I believe in partnerships with all the players. For example the manufacturer, customer, supplier and other services industries, for without the support of any one of them, the others will struggle to succeed.”

“My biggest fear for the industry is the fast escalating costs. Over the past five years, our labour costs have increased by 50%, whereas Western European labour costs have increased by only 10% over the same period.”


“In addition electricity price hikes of, on average 25% a year since 2008, have eradicated our historic low-price energy advantage. Our industrial energy costs are now above those of our major competitors in other countries.”

“My wife Angela has not been well, which is one of the reasons that I have retired slightly prematurely. She is now recovering and we are looking forward to retiring to Marloth Park, Mpumalanga and spending some time with the animals. One of my great loves, as well as being a hobby, is photography and they (the wild animals) are great subjects.”

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James Durrans and Sons spreads its knowledge worldwide

When James Durrans and Sons first opened for business in 1863, Yorkshire was awash with Victorian optimism, and the region's companies were taking the UK into new markets. Now, the family-owned company that celebrated its 150th anniversary last year, is an internationally recognised entity with manufacturing sites in China, India, South Africa, Germany and France and customers include steelmakers, foundries, glass, refractory and furnace manufacturers, as well as the battery, chemical, lubrication and automotive industries.

The company, which recently moved into a new state-of-the-art Head Office especially constructed to mark the 150th milestone, is located in the Pennine town of Penistone, UK and operates four UK manufacturing sites, namely Penistone (Yorkshire), Bilston (West Midlands), Brancepeth (Co. Durham) and Scunthorpe (Lincolnshire). Each site has a particular specialisation.

Manufacturing facilities in Europe are centred in Willich (near Dusseldorf, Germany) where a centre of excellence houses a modern refractory coatings production facility. Asia and Far East countries are serviced from the refractory coatings plant situated in China (James Durrans (Tianjin) Coatings). Joint ventures are located in South Africa, India, Germany and France.

The company supplies refractory coatings and carbon-based materials such as milled coal dust and anthracite, metallurgical and petroleum cokes to manufacturers across the world.

South African JV

James Durrans and Sons relationship with South Africa was cemented in 1999 when the company signed a joint venture manufacturing agreement with local company RMS, to manufacture their mould coatings locally. Production subsequently began in 2000.

A new company, Durrans-RMS (Pty) Ltd, was formed to locally manufacture and market the mould coatings and the other products that James Durrans and Sons manufacture in the group, which includes blackings, recarburisers, sand additives and natural graphites.

At that stage it was the first time that James Durrans and Sons had entered into a JV agreement. The success of this JV was the model for their other JV's internationally.

The local company's relationship with the James Durrans and Sons Group resulted in the company promoting the flood coating range of coatings for moulds and cores in South Africa. Traditionally RMS had supplied foundries locally with coatings which were only suitable for brushing, spraying and swabbing.

The local company was innovative in introducing the static and transportable returnable bulk tanks that have proved to be very successful. There are obvious major advantages in the use

of bulk tanks for mould coatings. Essentially the foundry only pays for the coating used without the problem of bucket and drum costs and disposal thereof. The provision of storage tanks and flood coating equipment is provided to the end user at no cost, provided it is utilised for the proprietary products.

Durrans RMS new coatings manufacturing equipment set up in Boksburg

The JV company between RMS and James Durrans & Sons continued to grow its market share in the coatings market. However capacity was limiting growth and in line with James Durrans' strategy to standardise their manufacturing facilities around the world, including China, the company invested over R1,5 million in a new state-of-the-art Vollrath mixing plant imported from Germany in 2005.

This coincided with a move to a 7 500 m² under roof site in Anderbolt, Boksburg North, Gauteng.

The mixer, which is capable of mixing five tons in a mix, increased the company's capacity three-fold. With their

technology transfer Durrans RMS supplies coatings that are of the same quality and consistency as is supplied worldwide. The plant produces a full range of both solvent and water based coatings.

China

The Durrans RMS JV had been a great success. Ironically, Durrans' next step forward in expanding production overseas would not employ the joint venture template. China, where the Group had been involved for some years, was rather different. Although the country was a major source of petroleum cokes for Durrans, and had a

booming economy, its auditing, financial and legal infrastructure was much less developed.

Durrans had been extending its presence in China even before the South African joint venture had been set up. Christopher Durrans, the current MD and a fifth generation family member, had been travelling in China, purchasing raw materials, as his father had done. He realised that a full-time employee was needed there if the Group was to make any more progress. In 1998 he persuaded Jiang Ping, whose knowledge and expertise had been invaluable during the preceding decade, to join the Group from Minmetals and take over the task of sourcing Durrans products from China. As he recalled, 'This was a huge step for us and one that secured our leading position in Asia'.

Over the next few years, the Group started developing its sales and marketing function in China, and also set up a trading operation, selling raw material to customers in Europe and South America. In 1999, just as the South Africa venture was



Mike Robinson and Kevin Nesbit of Durrans RMS presented Christopher Durrans of James Durrans and Sons with a bronze statue to mark the occasion of the company's 150th anniversary. Dave Armitage of James Durrans and Sons is on the right

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An aerial view of Durrans RMS 7 500 m² under roof site in Anderbolt, Boksburg North

getting underway, Durrans began exporting trough blacking from the UK for use in China's state-owned centrifugal pipe foundries.

Christopher Durrans soon concluded that there was great potential for Durrans in the booming Chinese economy. Buoyed by the success of Durrans RMS, he felt that the time was right to establish a production base in China, which would also enable the company to offer local Chinese customers a high quality service and more competitive prices.

Initially, Christopher Durrans was happy to consider another joint venture, even though in China this stipulated that it was the Chinese partner who should retain a majority holding. At the time, however, this was the only route available for foreign businesses seeking to set up operations in the country. But it proved to be a complex and time-consuming process, revealing the under-development of China's legal and financial infrastructure. Fortunately, China had begun to loosen restrictions on foreign investment and it became possible to set up a completely independent company. For Christopher Durrans, this was essential in order to retain control over the business and its intellectual property. Durrans was also able to take up tax incentives designed to encourage inward investment. Nevertheless, the rules governing the creation of new companies were still very complex, and the company took advice from leading accountants and lawyers.

James Durrans (Tianjin) Coatings Ltd was established in Tanggu, part of China's biggest industrial port, Tianjin, in 2003. Jiang Ping was joined on the local board by David Armitage, who is the company's Technical Director, who would spend eight months of every year in China. Together they promoted the Group's products, highlighting the qualities of the Durrans range, and working closely with customers to develop products that matched their requirements.

Plans were at an advanced stage for the new factory. Plant and equipment were ordered from Germany, and a Vollrath mixing plant was installed. The latter would actually be the Group's first Vollrath, predating the machines later acquired in 2005 for the UK and South Africa and in 2006 for Germany. In fact it was the benefits of the Vollrath plant in the Chinese factory that persuaded the Group to acquire similar machines for its other production plants.

The Chinese company finally came into being in December 2003. The company rented a warehouse at the Ocean Hi-Tech Development Area in Tanggu, converted it into a factory, and produced the first batch of coatings in September 2004.

Winning new business, in spite of all the efforts so far made by the Group, was still difficult

The Chinese company built on its previous external

trading links, focusing on the wider market of South-East Asia, particularly Malaysia, Thailand and South Korea. Products were also marketed to overseas foundry businesses setting up in China. And, in time, the company began winning orders from Chinese companies.

Initial growth in a rapidly expanding economy was astonishing, reaching 50 per cent every six months, and even once operations had begun to settle down, the company continued to grow at ten per cent a year after 2008.

The company soon outgrew its original premises and it was decided to build a completely new factory. Once again Durrans benefited from incentives offered by the Chinese government, acquiring land in June 2007 on a long leasehold at a preferential rate, although erecting the new factory on what was reclaimed marshland was not without its challenges. The new factory, with a production capacity of 750 tons every month, began production in 2010.

In 2012 the Chinese company accounted for more than half of the Group's coating production, and it recently added a third Vollrath machine, increasing capacity to over 1,000 tons a month.

Pipe foundries and the car industry accounted for 80 per cent of production. Among key customers were some of the world's leading producers of car turbines and manifolds, for whom Durrans produced high value, low volume products. As Jiang Ping observed, 'We tailor-make the product for them'. For instance, Durrans spent two years collaborating with the world's largest engine-block manufacturer, developing a very high quality coating, which proved an outstanding success.

Durrans has made a difference in these sectors of the Chinese economy through the high quality of its product and service (it achieved the ISO9001 quality mark in 2006) and partnership working with customers. As a result, Durrans has won a high reputation and is widely seen as a leader in its field.

The Chinese company also helped the rest of the Group in sourcing raw material, inspecting quality, and dealing with the complex customs administration.

South African visit

In January 2014 Christopher Durrans and David Armitage visited the local JV company and a host of South African foundries.

"The primary purpose of our visit was to encourage the local industry to take note of the new products that are now emerging from the company because of the technical developments that have been taking place in China. These include the quality raw materials that are used in our products as well as the manufacturing processes. As we all know China is developing fast and new foundries are springing up every day. The growth in modern new automotive foundries to supply the ever increasing automotive OEMs setting up business in China is phenomenal and they are relying on suppliers like ourselves to add value," said Christopher Durrans.

"Through our experience in the vibrant Chinese market we are able to impart this knowledge to the local industry, which also needs to be aware that in China the foundry industry is now regarded as a profession. Young engineers are constantly being recruited and modern high-tech equipment is being installed to cope with the demand and as a result quality is on the rise. Worldwide the foundry industry needs to be aware of these facts because the Chinese don't just look internally for growth."

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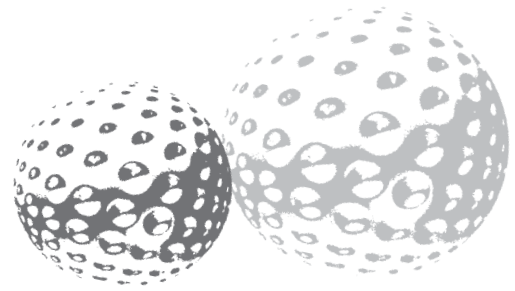
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SAIF 2013

Annual Golf Day



The South African Institute of Foundrymen's Annual Golf Day took place on Thursday 14th November 2013. The event was held at the Reading Country Club.

The SAIF Council would like to thank the following companies for sponsorship of prizes, tee boxes and greens: Ametex, Applied Casting Solutions, BSD Refractory Supplies, Ceramic & Alloy Specialists, Crawford Publications, Cronimet, Endeco, Forace Polymers, Fosco South Africa, GFE – MIR, Guestro Automotive, IMP Scientific, Insimbi Alloy Supplies, JC Impellers CC, Krier Africa, Lauds Foundry Equipment, Lil Sales, MCTS, Mineral-Loy, Morgan Advanced Materials, NFTN, Rand York Minerals, Reclam Group, RelyIntraCast, SAIF, Saveway Furnace Monitoring Africa, SI Group HA, Southway Refractories, Spectro Analytical, Thos Begbie and VIP Metals.

The competition on the day was four ball alliance with two scores to count and four scores to count on the par 3s.

The closest to the pin prizes on the 5th, 7th and 11th holes were sponsored by SI Group HA, Lauds Foundry Equipment and Insimbi Alloy Supplies respectively and the longest drive

prizes on the 4th and 18th holes were sponsored by VIP Metals and Lil Sales.

The winners on the day on a score of 126 points were Conrad Beukes, Anton Erasmus, Conrad Liebenberg and Paul Norris. Great score for players with handicaps of 21, 24, 23 and 16 respectively. Their individual stableford points were even more remarkable with scores of 43, 43, 41 and 49 and Paul Norris played outstandingly shooting 74 gross of his 16 handicap. This four ball also won the two longest drive prizes and one of the closest to the pin prizes.

Coming in second on a score of 99 points, a more realistic score, were Andrew McFarlane, Mark Sims, Alan Atkinson and Noel Saunders. Coming in third, also on a score of 99 points but on a count out, were Derick Elliot, Fubio Ciani, Hennie Niemand and Rudi Pienaar.

The longest day prize winners on a score of 63 points were Chris Pope, Iain Dickason, Ricky Munsamy and Philani Mkandla.



Two members of the winning four ball – Conrad Beukes and Paul Norris, with Karien Du Plooy of Saveway Furnace Monitoring Africa, the sponsoring company of the first prize and the giveaways when the golfers booked in



Coming in second on a score of 99 points, a more realistic score, were Alan Atkinson, Andrew McFarlane, Mark Sims, and Noel Saunders (not in picture)



Dudley de Beer of the sponsors Insimbi Alloy Supplies with Donovan Albertyn who won the closest to the pin prize on the 11th hole



On 98 points and in fourth place were John Prins, Gavin Homan, Bryan Dicks and Frank McGuinness



Coming in third, also on a score of 99 points but on a count out, were Derick Elliot, Hennie Niemand, Fubio Ciani and Rudi Pienaar



Colleen Boyce of the sponsors SI Group HA with R Bean who won the closest to the pin prize on the 5th hole



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TASA to host ISTMA 2014 in Cape Town

World Conference will take place in March 2014.

The Cape Town International Convention Centre is the venue where the ISTMA 2014 World Conference will take place in March 2014. A two day Toolmaking Industry and Associated Skill Exhibition will run alongside the conference, focussing on career opportunities in the tool design and manufacturing industry in South Africa. The exhibition provides an opportunity for companies and organisations to gain exposure to the delegates attending the conference and students looking for career guidance. Exhibitors will be further supported by the participation of the Regional Tooling Initiatives through which the revitalisation of the South African tooling industry is driven.

The ISTMA World Conference is one of the most important events on the Association's calendar, where delegates meet to share information and experiences within the sector, analyse trends and new challenges for the tooling industry worldwide.

More than 300 international delegates from some 20 countries attended the last ISTMA World Conference, which was held in Windsor, Canada in 2010.

On Wednesday March 12 the ISTMA Regional meetings will take place in the morning and the ISTMA World Assembly in the afternoon. These sessions will be followed by the exhibition opening and the welcome cocktail function in the evening.

Thursday will see technical sessions take place in the morning and afternoon followed by a plant tour and the gala dinner in the evening. Friday, the last day of the official conference, will again have various technical sessions followed by a plant tour.

Attendees have a chance to attend eight technical sessions. Session topics include: The South African Tooling Initiative: A turnaround strategy, Challenges of expanding into Africa, A structured approach to workshop (toolroom) management in a

working economy, additive manufacture for the tooling industry, ISTMA tooling statistics, mechatronics and advanced assembly, benchmarking, clustering and collaboration.

Special extended social tours will take place on the weekend and tours for accompanying partners have been planned.

"On behalf of ISTMA we invite you to join us in the beautiful city of Cape Town, South Africa for the 14th International Special Tooling & Machining Association – World Conference. Cape Town is a stunning venue offering a world class convention centre and a vast array of fascinating and interesting places to visit including six of South Africa's top ten tourist attractions within a 30 minute drive of the city," said Bob Williamson, National Chairman

of the Toolmaking Association South Africa.

The Toolmaking Association of South Africa (TASA) is a full member of the International Special Tooling & Machining Association, a multi-national organisation representing the world tooling industry. ISTMA promotes

international meetings to support a worldwide exchange of experience. Every three years a major World conference takes place. In March 2014 we are privileged to be its host in Cape Town.

ISTMA is an international association representing thirty special tooling and machining associations throughout the world. Collectively, ISTMA member associations represent over 8,000 companies and over \$40 billion U.S. dollars in annual sales.

Registration forms and full details on the conference, fees, sponsorships, exhibition costs, the programme and the technical sessions are available on the website www.sbs.co.za/istma2014.



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Graphite electrodes, for use in furnaces, duty increase

Decision appears to be absurd in view of local manufacturer closing manufacturing plant.

The South African Revenue Service (SARS) has announced an increase in the "General" rate of customs duty (Schedule No.1 Part 1) on graphite electrodes, classifiable under tariff subheading 8545.11, from free of customs duty to 10% ad valorem. The application was published in the Government Gazette of 22 March 2013 and took 238 days (just under 8 months) to complete.

On November 22, Itac published a notice of an investigation into the alleged dumping of graphite electrodes, for use in furnaces, originating in or imported from the People's Republic of China and India. Comment was due by December 30, 2013.

The applicant, GrafTech South Africa (Pty) Ltd, provided the following reasons for the application (1) it is the only manufacturer of graphite electrodes in the SACU region and is suffering serious injury as a result of rapidly increasing imports at declining import unit prices; (2) the low priced imports have severely affected the profitability of the business; (3) the company's investment in the SACU economy is under threat because of the serious injury being caused by imports; and (4) as the sole SACU region manufacturer of graphite electrodes, GrafTech South Africa (Pty) Ltd, and its products are essential to a number of industries, and it is in the best interest of the SACU economy to retain this

important investment.

A number of respondents, including Botswana's Ministry of Trade and Industry, objected to this duty application, which appears to have been signed off on the 7th October 2013 by Itac Chief Commissioner Siyabulela Tsengwe, according to documents on hand.

Closure of GrafTech graphite electrode manufacturing plant

The decision appears to be absurd especially in view of a letter sent to customers by Darrell A. Blair, Vice President, Graphite Electrode Sales on the 31st October 2013. In it Blair announces and I quote: "A series of restructuring actions that are scheduled to take effect over the coming months. These efforts involve realigning our production platform, which includes the closure of the Meyerton, South Africa: Graphite Electrode Manufacturing Plant – subject to ongoing union and workforce consultations, and the closure of plants in Brazil and Russia."

Negotiations are ongoing but as one industry player said: "Imports from the European Union (EU), the European Free Trade Association (EFTA), and the Southern African Development Community (SADC) are now being protected by this duty. Countries other than these are being impacted, despite there not being a local manufacturer, which was what the original application was about." ■

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Quality Alluvial Silica Sand

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Learners complete their qualifications in Foundry Operations and are now available for placement in industry

Skills development and education of 14 school leavers formed part of a pilot project for The Career Path Framework initiative. These learners have achieved NQF level 4 qualifications.

The foundry industry is a complex and specialised sector supplying a vast range of quality metal products to downstream customers. The emergence of South Africa as a cost effective supplier to international markets has created a demand for people with the skills to manufacture the final products as well as function within the support processes to the manufacturing process. These processes include foundry patternmaking, moulding and melting.

The Foundry Career Path Framework Project was initiated in September 2008 with the first industry workshop being held in October 2008. The overall objectives of this project were to:

- Re-design the draft Foundry qualifications (NQF Level 2 – 4) in accordance with the newly developed qualification design model
- Develop an occupational profile to articulate with existing qualifications in specific foundry sectors
- Create a learning pathway / career path framework
- Develop curriculum in support of the occupational profile
- Negotiate the process of registering the qualifications and unit standards on the NQF with SAQA
- Keep the project informed of the criteria and guidelines being developed regarding the occupational qualifications of the QCTO

A project team and various smaller working groups were established that met on different occasions for different purposes. The project process were driven by two primary industry objectives namely to produce sound castings and to remain competitive. Working within the parameters of these two primary objectives, a project approach and process was designed in order to meet the project objectives above.

The foundry industry rallied their support, and their commitment to this project is clearly evident in the substantial achievements of this project over the past 42 months.

“One initiative of the project was to place 18 school leavers at three of the major companies in the industry, to be trained in three main areas of foundry operations, namely melting,

moulding and pattern making processes,” said John Davies, CEO of the South African Institute of Foundrymen.

“We would like to thank ArcelorMittal South Africa, Atlantis Foundries and the Scaw Metals Group, the NFTN for the funding and the project team members for being involved in this initiative,” said Davies.

“The programme was multifaceted in that the learners were initially trained in the three main areas, as well as in the other areas of foundry operations and practice and, in the last phase of the programme learners could choose in which field they wanted to specialise. Melting, moulding or patternmaking.”

“Fourteen of the initial intake, have now completed their studies. The three and a half year training period involved practical learning with their ‘hands’ and classroom theory, before writing their exams.”

“I do believe that the learnership training programme developed the students’ foundry skills on a much broader basis and they are more qualified than a student that has qualified as an artisan.”

“Six of the students have already been placed in industry and we are looking to industry to employ the remaining eight. After all, industry called for skills training to be addressed and this is one of the initiatives that has filled the skills gap.”

Davies believes that the pilot project has shown that the programme has been successful and that the SAIF will follow up with similar initiatives in the future and, may include people that are already employed in the industry, if industry supports the SAIF in its endeavours.

He adds that it is part of a long-term developmental and training programme to bridge the skills gap in South Africa. The SAIF is also involved in presenting a number of short course programmes to up-skill existing foundry employees countrywide and was instrumental, with its partners, in setting up the recently opened Gauteng Foundry Training Centre, where twenty apprentices started their training in January 2014.

For further details contact John Davies on
TEL: 011 559 6468 or 083 630 2809

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Zimalco relaunches its online presence

Zimalco has reported it has redesigned and relaunched its online presence with a new website designed to deliver “all your aluminium foundry alloys, powders and deoxidants needs.” Zimalco is a division of the Zimco Group (Pty) Ltd, one of South Africa’s leading producers of industrial and base minerals and incorporates some of South Africa’s leading recycling companies including Fry’s Metals and Zinchem.

The website – www.zimalco.co.za – describes the company’s expertise, operations, capabilities, and quality and control standards, in an online presentation that is easy to navigate.

The company was founded in 1948 and is the beneficiary of many decades of experience and stands out amongst its peers as the leader in technical innovation. It also has access to the most advanced international technology through information



SAIF 51st Annual Awards Dinner 2014

The South African Institute of Foundrymen invites you and your customers to the 2014 Annual Awards Dinner to be held at the Emperors Palace, Kempton Park, Gauteng on Friday 31st May 2014.

This is the 51st occasion that the SAIF Annual Awards Dinner will take place. Various awards are handed out to industry including the Sasol Synfuels Procurement and Marketing/Insimbi Alloy Supplies Award, a Non Member Diploma, the Foseco Award, the Colin Butler Award and the A H Guy Award.

The Annual Awards Dinner is a formal occasion.

Please advise your party of the dress requirement i.e. Black Tie. The ladies' dress is also formal.

| | |
|--------------------------|--|
| Date & Time: | Friday, 31 May 2014 19h00 for 19h30 (7:00pm for 7:30pm) |
| Venue: | Assembly Room, Caesars Convention Centre, Kempton Park, Gauteng |
| Address: | 64 Jones Road, Kempton Park, Gauteng |
| Dress: | Black Tie formal |
| Parking (secure): | Parking is free in the grounds of the Caesars complex - refer SAIF at the entrance gate |
| Refreshments: | Strictly a cash bar |
| Cancellation: | Cancellation charges are applicable |
| Reservations: | For bookings, please contact Marina at the SAIF on TEL: 011 559 6455 and/or email mbiljon@uj.ac.za |

exchange with research groups and other international leading suppliers of secondary aluminium. Such expertise and competence provide a sound backing for all its products and it has the ability to challenge international suppliers of similar products, especially in terms of quality, cost and service.

The bulk of the Zimalco business comprises of the supply of international standard products to markets both locally and around the globe. Zimalco also produces many specially designed products to meet customers' specific process needs.

In 1989 Zimalco became the first secondary aluminium smelter in South Africa to be listed under the SABS 0197 Quality Manufacturing Standard. Today Zimalco is listed under the current ISO 9001 Quality Management System, OHSAS 18001 Occupational Health and Safety and ISO 14001 Environmental Management Systems. These ensure that the Zimalco products and services not only fully meet their intended quality and service but also that they are manufactured with consideration for the safety of all employees and users of their products, while Zimalco's immediate environment, and that influenced by their operations, is well managed to reduce the effects of the company's carbon footprint.

The Zimalco plant, which is situated in Benoni, Gauteng, has a capacity in excess of 30,000 ton per year and employs more than 160 people. Raw materials are obtained from many of the South African aluminium converters, scrap metal recyclers and when required, from the primary aluminium smelters.

The Zimalco products are marketed under the world renowned and registered brand names Supral for foundry ingots and Supramex for specialty powders.

The company is Level 6 BBBEE certified and on the corporate social development aspect Zimalco has adopted Kgothlang Primary School in Wattville. The co-educational school, which caters for primary education for previously disadvantaged learners, has seen significant improvements in structural facilities over the last two years, all sponsored by Zimalco. The company has continued its involvement with the school in the form of supplying uniforms and computers and other monthly expenses.

For further details contact Zimalco on TEL: 011 914 4300 or visit www.zimalco.co.za



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ZF sells South African subsidiary

Auto Industrial Brake & Chassis

The deal includes four ZF plants in Johannesburg including two foundries, a forge and a machining plant.

It has been announced that ZF Friedrichshafen AG is selling Auto Industrial Brake & Chassis Holding Johannesburg (AIBC), its South African subsidiary. Investor Trinitas will acquire the plants. The contracting parties have agreed not to disclose the purchase price.

The subsidiary AIBC contains a forge and two foundries, among other things, and produces components for the automotive industry, including brake disks. The four plants, which employ roughly 900 staff generated sales figure of EUR 71 million in 2012.

ZF signed a joint venture contract for the AIBC company in 1999, thus entering the South African components market. In

2006, ZF had taken over the entire company which operated as a local supplier to ZF's Car Chassis Technology division.

Recently, ZF has strategically realigned its business and sold the subsidiary whose activities are centered outside of ZF's core business and which worked autonomously in the global ZF production network. The sale is dependent on the approval by the South African competition commission authorities.

ZF is a leader in driveline and chassis technology with 121 production companies in 26 countries. In 2012, the Group achieved a sales figure of about EUR 17.4 billion with approximately 75 000 employees. In order to continue to be successful with innovative products, ZF annually invests about five percent of its sales (2012: EUR 861 million) in research and development. ZF is one of the ten largest automotive suppliers worldwide. ■

Aluminium production at BHP Billiton's Bayside smelter expected to end

Aluminium production at BHP Billiton's Bayside smelter in Richards Bay is expected to come to an end in the next few months, according to local newspaper reports. The sad but inevitable news was communicated to employees and stakeholders at a briefing at the Hillside smelter recently.

With the company being 'in the red' for the past 18 months, the announcement came as no surprise but was still met with shock, concern, tears and anxiety by the majority of staff.

Addressing stakeholders, Asset President at BHP Billiton Aluminium SA Lucas Msimanga said the decision was essential to ensure the future sustainability of the Hillside smelter instead of continuing to run a struggling 'end of life' business.

In September 2012, BHP Billiton announced the review of its Bayside aluminium facility in Richards Bay as the operation had been under significant and ongoing financial pressure. As part of that process, BHP Billiton began a formal consultative process with employees on a proposal to cease smelting activities and associated services at Bayside.

"Our aim is to minimise the impact of any changes on employees and the local downstream industry," said a company statement. "BHP Billiton has been in ongoing discussions with its stakeholders to discuss the challenges faced by the business, explore options for the Bayside operation and ensure a sustainable aluminium business can operate in Richards Bay."

Cast house

To support the ongoing supply to the local customers, the cast house within the Bayside operation will continue to operate with supply from the neighbouring Hillside smelter while further options are assessed for its future. Decommissioning and rehabilitation of the remainder of the Bayside site, if undertaken, would provide an additional source of employment for the duration of the project.

"As we work through the consultation process, the health, safety and wellbeing of our people will remain a priority," said BHP Billiton South Africa Vice President Communications and Stakeholder Relations, Lulu Letlape.

"We are focused on mitigating the impact of potential job losses while ensuring the existence of a sustainable aluminium business in Richards Bay."

The decision to stop aluminium production at Bayside will in turn release approximately 160 megawatts of power back to Eskom's electricity grid at no compensation to the company. Bayside, which employs approximately 500 employees, is the only producer of value-added primary aluminium products in Southern Africa that is used for the local market. ■

SAIF Annual Golf Day 13 November 2014

The South African Institute of Foundrymen's Annual Golf Day will take place this year on Thursday 13 November 2014. The event will be held at the same venue where it has been held for a number of years now, namely at the Reading Country Club.

This year the field will be limited to 36 four balls and will be dealt on a first come first served basis.

The cost per fourball includes a gift from the SAIF, green fees, halfway house voucher and a meal at prize giving. Caddy fees and any other expenses are for the individual's own account.

There are a number of tee boxes, greens and entire holes, which can either be manned or have advertising banners displayed, that are available for sponsorship. Details of costs are available from the SAIF.

Individual companies are allowed to have their own corporate sponsorship within their fourball/s.

The format of the competition is fourball alliance, two scores to count.

Please note that due to previous experiences a strict 'no pay no play' rule will be enforced. Companies and individuals wishing to play will have to pay in full by the booking deadline of 31 October 2014. This will include all outstanding monies that are owed to the SAIF.

To make your booking please contact Marina at the SAIF on TEL: 011 559 6455 or email mbiljon@uj.ac.za



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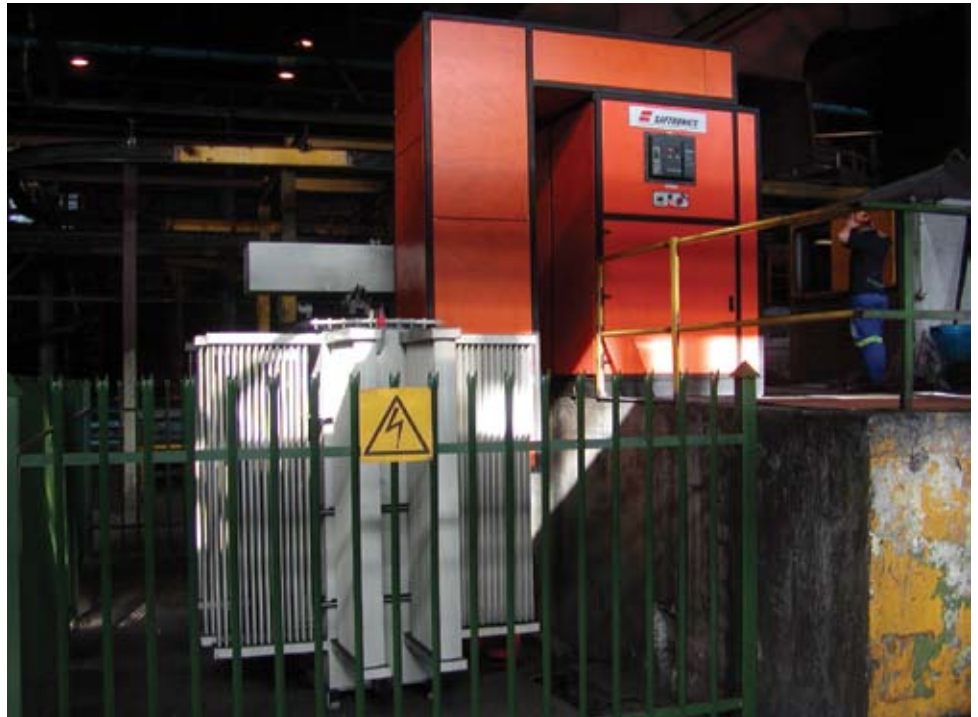
A recent installation done by Saftronics Induction Heating.

Local furnace and power supplier manufacturer Saftronics Induction Heating has relocated to the N4 Gateway Industrial Park in Pretoria, Gauteng. The new 1 000 m² facility comes equipped with a state-of-the-art test facility and a 10 ton crane, allowing the company to broaden its horizons and be involved in large scale projects.

Saftronics Induction Heating is headed up by Deon van Staden, who has been in the furnace manufacturing industry for over 38 years. The company was formed when van Staden's company Solid State Induction Heating joined forces with Saftronics (Pty) Ltd in September 2012.

Saftronics Induction Heating manufactures box furnaces, lift-swing furnaces and induction billet heaters for the induction heating and melting industries. However, according to van Staden they are able to customise a solution specific to a client's needs.

"We have just completed a project at Transnet Foundry in Bloemfontein where we installed two 1250kW melters with two 3 ton furnaces. In this case we incorporated the existing cooling system, furnace frames and hydraulics into the project. Utilising our resources from within the



A recent installation completed by Saftronics Induction Heating

group the transformer was rewound by our transformer division in order to achieve the required voltage output."

The Saftronics Group has been operating from Johannesburg, Gauteng for nearly 50 years in the power electronics industry.

For further details contact Saftronics Induction Heating on TEL: 083 272 5465 ■

Local temperature certification and testing offered

Endress+Hauser Pyrotemp in Apex Industrial, Gauteng is home to a local temperature calibration laboratory that offers temperature certification and testing. Established to international standards in July last year, it has already received the ISO17025 accreditation by the South African National Accreditation System (SANAS).

The local production centre was already accredited as an ISO9001 facility in April 2011 by the Swiss management quality assessment company SQS Group (SQS).

All calibration devices are traceable and certified according to international standards monitored by the independent authorities DKD, SIT and SANAS thereby

ensuring the highest quality and accuracy of the factory calibrations.

Factory calibrations can be issued by any laboratory, whereas calibrations made to SIT, DKD or SANAS accreditation must be performed in an accredited laboratory and are accepted worldwide.

Endress+Hauser Pyrotemp has the capability to handle temperatures from -20 °C to +1550 °C thus making it one of the most advanced temperature calibration facilities in South Africa.

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- Insimbi Aluminium Alloys is a producer of quality deoxidants.
- Insimbi Nano Milling develops, manufactures and distributes nanosized products and composites.



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Procor

achieves ISO 9001 certification

Local foundry consumable supplier Procor Steel Traders is proud to announce that the company has been awarded ISO 9001 certification according to KIWA, a German based certification body. The company achieved the status in December 2013.

"It's been a long road but we are proud of what we have achieved," said Procor owner Fubio Ciani.

"In August 2012 we appointed a SHEQ consultant Steven James from Dynamic eStudio Systems to assist with the implementation of the ISO 9001 Quality Management System. The management team was very committed and developed an action plan to upgrade the facility."

"This required a considerable cash injection with each building and our manufacturing process and systems being upgraded over the following 12 months."

"The warehouse was greatly improved and the warehouse processes were clearly defined. Shelving and racks were well labelled and flooring was restored and walkways were painted. The warehousing process involves taking receipt of raw materials or products, updating inventory records to show the new items, and placing the items in their proper location for appropriate inventory organisation and management."

"The newly appointed warehousing manager, in consultation with management, must ensure a balance between supply and demand by establishing minimum holding stocks to cover lead-times and keep abreast of changing needs and priorities."

"The paint plant underwent a revamp and safety was greatly improved as part of the upgrade. Safety signage was revamped across the entire plant, electrics were overhauled and brought in line with legal requirements and flooring was



In the sleeve making plant considerable work was done. The ovens were refurbished, the floor was restored, the drainage was overhauled, the pressure vessel was replaced and piping was completely replaced

restored and walkways painted."

"The sleeve store was repacked and stock has been packed into specific categories."

"In the sleeve making plant considerable work was done. The ovens were refurbished, the floor was restored, the drainage was overhauled, the pressure vessel was replaced and piping was completely replaced. The mould store was upgraded as well."

"The upgraded facility has improved our processes and has also improved the employees' morale. The ISO system has allowed us to improve our production and we are better equipped to ensure good quality products leave our gate. It was a management decision made in July 2012, as we knew that we had to implement a quality management system so that we could compete not only against our local opposition but also against the threat of imports. The ISO 9001 Quality Management System has now given us an edge not only in production but it is also used as a marketing tool."

"We are currently building a laboratory, which should be completed in March 2014, to monitor, measure and test products as part of our commitment to continually improving products and processes."

Procor, established in 1997, supply exothermic foundry sleeves, foundry spirits and other mould coats, putty, monolytics to line ladles, hot toppings for Irons and SG irons, steels and non ferrous metals, aluminium slip for pattern boxes, parting powder to prevent sticking to the wood moulds, sealant, mouldable and mastic adhesives, sodium silicate, core glue and breakdown agent.

The company is located in Vulcania, Brakpan, Gauteng and has a staff complement of 32.

For further details contact Procor on TEL: 011 740 1450 or visit www.procor.co.za



The sleeve store was repacked and stock has been packed into specific categories

SABS
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Matthias Altendorf takes up his new position as CEO of the Group – Klaus Endress joins the Supervisory Board.

Changes at Endress+Hauser

Changes have taken place at the top of the Endress+Hauser Group. With effect from 1 January 2014, Matthias Altendorf will be the new CEO of the family-owned company. The 46-year-old is only the third CEO in the company's history starting in 1953 – and the first one not coming from the Endress shareholder family.

Klaus Endress, who has led the Group since 1995, will at the same time take his seat in the Supervisory Board. Preparations for the succession have been going on for some time.

Klaus Endress (64) has in recent years repeatedly announced his plans to withdraw from operative business. It was also known that, for reasons of age, no other member of the shareholder family would follow him right now.

"We want to avoid speculation and discussions," explained Klaus Riemenschneider, President of the Supervisory Board. "Announcing the succession at an early stage will provide clarity and smooth the transition."

The new CEO will be Matthias Altendorf, until now Managing Director of Endress+Hauser's largest plant in Maulburg, Germany, and since 2009 also a member of the Group's Executive Board. 45-year-old Altendorf has spent his entire working life at Endress+Hauser, beginning with a mechanic's apprenticeship at the Maulburg plant followed by advanced training and further education. Working for Endress+Hauser Flowtec in Reinach, Switzerland, Altendorf took on more and more responsibilities in various positions until moving up into management as Marketing Director in 2000. In 2005, Altendorf finally returned to Maulburg as Managing Director.

The Supervisory Board, Klaus Riemenschneider stressed, has taken this decision "in close consultation with the



Klaus Endress with new CEO Matthias Altendorf

shareholder family and with their full support". Klaus Endress underlined the importance of the time frame: "Mr Altendorf can hopefully be a good CEO of the Endress+Hauser Group for a long time – and if possible build a bridge to a younger member of the family as his successor."

Endress described Altendorf as an "Endress+Hauser man through and through, reflecting the culture, values and convictions that characterize our company", guaranteeing that the transition will be successful. Klaus Endress himself wants to ensure continuity by transferring to the Supervisory Board where he will follow its President Klaus Riemenschneider (69) who has held this position since 2002 and has announced his withdrawal by the end of the year.

For further details contact Endress+Hauser on TEL: 011 262 8000 or visit www.za.endress.com ■



Second edition of Aluminium Brazil in April 2014

Aluminium Brazil 2014, along with ExpoAluminio takes place 1 to 3 April 2014, at Centro de Exposições Imigrantes, São Paulo.

Just a few weeks before the kick-off of the World Cup in São Paulo in the summer of 2014, the international aluminium industry will gather there for Aluminium Brazil 2014 from 1 to 3 April. Like the debut event two years ago, the second edition of the trade fair will take place once again as part of ExpoAlumínio, the most important industry meeting of the aluminium sector in South America. A total of 170 exhibitors are expected for ExpoAlumínio, from CBA, the largest aluminium producer in Brazil, to key global players such as Aloca, Hydro, Novelis, Pyrotech and Wagstaff. Most of the international exhibitors will be consolidated under the umbrella of Aluminium Brazil, which accompanies ExpoAlumínio. Some 50 exhibitors from Europe, the Middle East and Asia will be represented there.

The largest exhibitor nation this year – behind Brazil – will be China. ExpoAlumínio is organised every other year by Reed Exhibitions Alcantara Machado and the Brazilian aluminium association ABAL. The trade fair supporting programme will include the 6th International Aluminium Conference and the International Seminar for Aluminium Recycling. More than

12,000 visitors attended the previous ExpoAlumínio event two years ago. With the inclusion of Aluminium Brazil in its portfolio, Reed Exhibitions Deutschland has expanded the global activities of the Aluminium World Trade Fair and now provides globally operating enterprises a targeted point of entry into the Latin-American market.

Brazilian aluminium market stabilises

Currently, Brazil ranks eighth on the list of aluminium-producing countries. Brazil remains an important emerging market, even though industrial growth there has slowed recently. In fact, activities within the Brazilian sector have actually started to accelerate again in October. Accordingly, the Brazilian industry association ABAL forecast growth of over 5% in aluminium consumption for manufacturing in its latest market survey for 2013. Above all, robust demand for roller and extrusion products destined for the transportation, building and construction markets has contributed to this growth, ABAL says.

For further details visit www.aluminium-brazil.com ■



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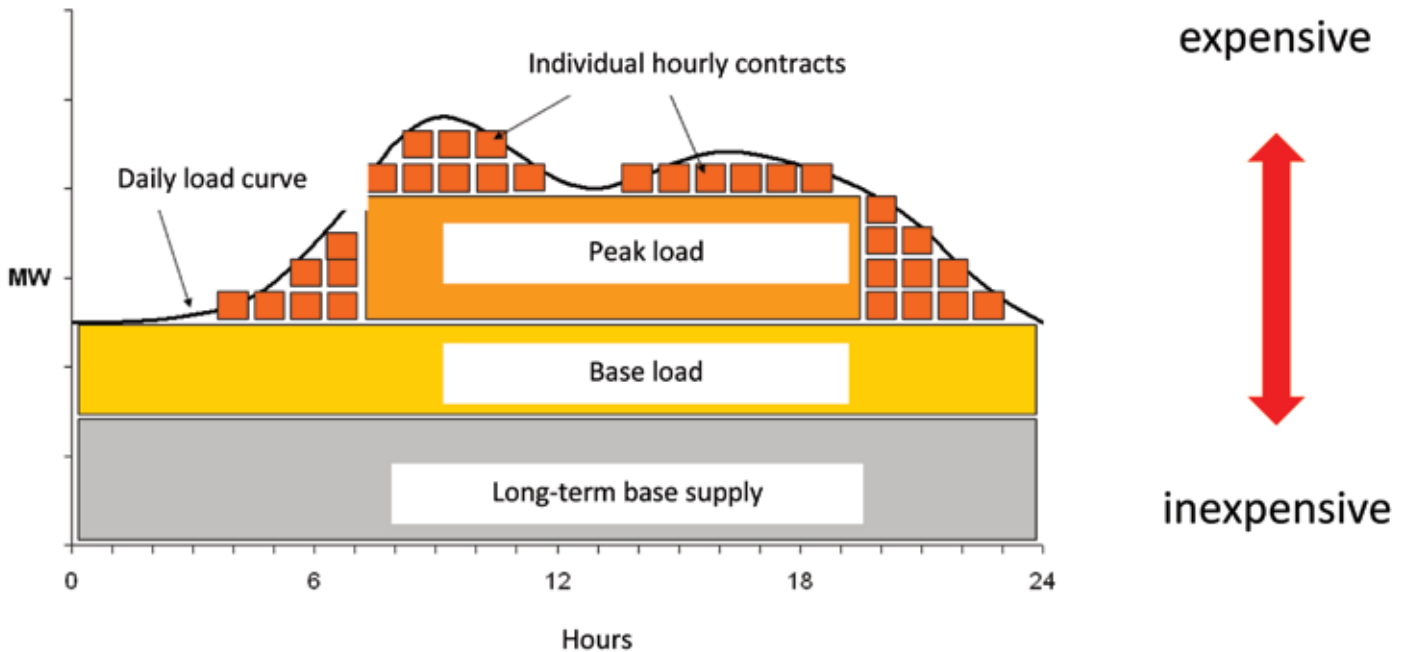
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Federal-Mogul develops new moulding process

Innovative piston ring casting technology results in lower friction, higher durability piston rings.

Federal-Mogul Corporation's Powertrain Segment has developed an innovative, highly optimised casting process for piston rings that will provide to engine manufacturers higher quality and stronger, more wear-resistant piston rings.

The process uses a highly automated vertical moulding process that delivers enhanced material integrity and improved manufacturing process control. Additionally, Federal-Mogul has developed a new casting simulation process that provides more precise data in order to optimise the material flow, pressure and filling of the piston ring casting moulds.

"As engine manufacturers continue to pursue strong engine downsizing and more advanced injection strategies to reduce fuel consumption and CO2 emissions, the thermal, mechanical and tribological demands on components around the combustion chamber - particularly piston rings - increases. While engine friction can be reduced through the use of thinner piston rings, a stronger ring material is necessary in order to maintain the proper bending strength," explained Dr. Steffen

Hoppe, director of technology, Rings and Liners, Federal-Mogul Powertrain.

"To achieve these requirements, we have developed new materials, casting and simulation processes."

New casting process

Federal-Mogul's extensive expertise in stack casting over the past 80 years has helped the company achieve consistently high quality within the constraints of a manual or semi-automated casting process. However, with stack casting, horizontal arrangements of multiple moulds are stacked above each other in layers, so



Federal-Mogul's piston ring manufacturing center in Burscheid, Germany, is the site of the new moulding process

the design of the runner system is compromised because the pressure and flow velocity of the molten metal varies across the different levels in the stack. The one-piece moulds used in the stack casting process also reduce the range of piston ring design options.

To overcome these limitations, Federal-Mogul's new, highly automated, vertical casting process uses a special mould design which provides new opportunities to optimise the design of the blanks and gating systems, improving control of material flow. The new casting form allows the feeding around the complete circumference of the casting, which improves the uniformity of the graphite formation of the grey cast iron significantly. Fully automatic moulding and casting, with extensive monitoring and in-process documentation of all relevant parameters ensures more reproducible molten material flow rates and more thorough mould filling, resulting in greater consistency in ring quality.

High-speed cameras, not FE modelling

Federal-Mogul also developed a new casting simulation method using high-speed cameras to overcome the limitations of conventional finite element (FE) modelling. "FE simulation has one major drawback," explained Hoppe. "No matter how fine a network is selected, the 'macro process' is still simulated. How close the simulation is to reality always depends on how well the simulation parameters are chosen and set."

Federal-Mogul said its Slow-Motion Casting Simulation (SMCS) technique provides a more detailed analysis of mould filling, enabling more precise optimization of the complex gating and feeder systems that control molten material flow. It



Casting a new steel alloy for piston rings at Federal-Mogul's Burscheid, Germany, ferrous foundry

means molten metal flow at different temperatures and casting speeds can be tracked more effectively, improving understanding and control of pressure fluctuations and the reactions of mould gases.

New casting material

The optimised casting process provided the opportunity to simultaneously develop a more highly refined cast steel material. Traditionally, a high strength martensitic grey cast iron containing nodular graphite would be used for diesel engine rings, with good ductility and strength up to around 1200MPa. Federal-Mogul's new cast steel material, GOE70, is characterised by a martensitic matrix structure with embedded chromium carbides and strength of at least 1800MPa. This formulation can be further improved for extremely high wear resistance by adding nitriding, providing a surface hardness of up to 1300 HV.

Piston rings made from GOE70 were subjected to a high number of endurance tests on heavy-duty diesel engines and showed exceptionally low side face wear and high robustness, enabling reduced exhaust gas blow-by and lower oil consumption. Series production of rings made from GOE70 began in 2012, with the first application on a highly loaded heavy-duty engine meeting EU6 emissions standards.

"Through the development of innovative casting, moulding and simulation technologies that provide



Federal-Mogul's Slow-Motion Casting Simulation technique using high-speed cameras to provide a more detailed analysis of mould filling, enabling precise optimization of the gating and feeder systems that control molten material flow

enhanced control of key process parameters, we have achieved improved product quality and increased strength and wear resistance," said Hoppe. "We believe this new ring process technology will further strengthen Federal-Mogul's leading position in the light and commercial vehicle piston ring market."

For further details visit www.federalmogul.com

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METEF-FOUNDEQ 2014 exhibition

The next edition will be held at the Verona Exhibition Centre, Italy from 11-13 June 2014.

The 2014 edition of METEF-FOUNDEQ, the biennial show regarded as one of the world's most reputable fairs for the aluminium, technological metals, and foundry sector will be held at the Verona Exhibition Centre, Verona, Italy on 11-13 June 2014. The trade fair complex located in Verona is a most suitable venue to match METEF-FOUNDEQ's international growth and to consolidate its role as the top reference fair, in particular for Southern Europe and the Mediterranean basin, according to organisers.

The Verona trade fair ground covers 350 000 m² distributed in 12 pavilions, with 12 000 car parking spaces, a Convention Centre with eight halls which seat from 20 to 600 people, and has a representative network in 22 foreign countries.

Focus on 2014 edition

Believing in the effectiveness of differentiation, METEF-FOUNDEQ has researched and will provide customised solutions for exhibitors, targeted services, and different and effective instruments to promote and realise concrete opportunities for demand and supply at an international level, in the belief that an international event must be able to meet the diverse and varied needs of operators.

Conceived as the exhibition dedicated to the aluminum industry, over the years METEF has expanded the business sectors represented, and now includes all metals and the complete production chain with FOUNDEQ - international foundry equipment exhibition, METALRICICLO, dedicated to the industrial recovery and recycling of materials and now, presenting for the first time in Verona, ALUMOTIVE, organised under the patronage of ANFIA, the exhibition dedicated to

innovative solutions, components, and technological materials for the original equipment used in the transport industry.

There will also be great attention given to technology transfer through round tables, technical forums, and seminars. The 2014 edition of METEF-FOUNDEQ will host numerous conferences and seminars of a technical-commercial nature with presentations by industry experts on the latest innovations in the aluminium and metals industry.

METEF 2014 and the parallel exhibitions aim to increase the number and quality of contacts thanks to the collaboration with industry associations AMAFOND, CEMAFON, and ASSOMET. The event is expected to be visited by specialized delegations and VIP visitors from Argentina, Brazil, Canada, the Czech Republic, Chile, China, Korea, Egypt, Germany, India, Indonesia, Iran, Iraq, Malaysia, Morocco, Mexico, Russia, Serbia, Singapore, South Africa, Thailand, Tunisia, Turkey, Vietnam, Ukraine, and the USA.

Social events and shows have been scheduled to entertain exhibitors and visitors as well, offering some fun time amid full business activities during and after the trade fair.

Amid these, do not miss the

Metef Golf tournament, one of the most anticipated events for golf enthusiasts.

The 2012 edition had over 500 exhibitors (375 from abroad) and more than 15 000 visitors. There were also 30 foreign delegations that visited the event from the major countries involved in the metallurgical industry.

For further information visit www.metef.com or www.foundeq.com



There will also be great attention given to technology transfer through round tables, technical forums, and seminars

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71st World Foundry Congress: knowledge, innovation and future



The 71st World foundry Congress will take place in the city of Bilbao, Spain, between 19th and 21st May 2014 under the theme "Advanced Sustainable Foundry".

The premier international foundry event is a highly renowned and prestigious technical Congress attracting experts, leading professionals and researchers from the global cast metal industry. It represents a major opportunity for companies, technical centres, universities and individuals to network on an international scale.

Held every two years, this long established event consists of a three-day technical programme with exceptional Keynote Lectures in which worldwide recognised professionals will present four keynote speeches in highlighted areas (environment, energy, innovation and market trends and demands).

The Technical Sessions represent the roots and identity of the Congress, which was founded in order to exchange and disseminate technical knowledge from and for the foundry industry. This aim has always been reflected in all previous editions and will continue on in Bilbao, where the latest developments and innovations will be presented in a number of highly relevant topics for the industry.

For the first time, the 71st World foundry Congress will also see the participation of young researchers and PhD students in the technical programme, with them assuming an active role and presenting their research work. Alongside, the Organising

Committee will also coordinate a Young Students Seminar enabling interaction between young students from different countries.

International foundry exhibition

The International foundry Exhibition will feature the latest technologies and applications of worldwide companies from different sectors of the casting industry, offering them a unique occasion to showcase to an international audience. The Inbound Commercial Missions -presence of global buyers - will act as a meeting point for companies and key figures from the industry. In addition, the Industrial Visits will allow the attendees to obtain a deep insight and understanding of the country's industrial structure and capabilities.

Highlights will include an interesting Social Programme including the opening and closing ceremonies, the Gala Dinner and the Foundrymen's Night at the Guggenheim Museum, with a full Accompanying Persons Programme.

Finally, the Post Congress Tours will offer participants a closer cultural approach to the heritage of the country. Specially selected itineraries are included in the programme with different alternatives that cover the most attractive areas, such as the Basque Country, Cordoba, Granada, Seville, Madrid, Barcelona and Canary Islands, among others.

For more information visit the website www.71stwfc.com



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US carmakers use aluminium, carbon fiber to cut weight

Non-traditional materials such as aluminium, carbon fiber and magnesium will show up in autos as companies try to increase gas mileage.

More vehicles than ever on display at the Detroit auto show are using non-traditional materials - aluminium, carbon fiber, magnesium - as U.S. automakers fight to get vehicle weight down and gas mileage up.

Ford's introduction of aluminium body panels for its workhorse F150 pickup truck was a radical shift which it said would knock up to 700 pounds from the truck's weight.

But it presents a challenge to discerning buyers who are accustomed to the country's premier pickup being built with solid steel, but also straining under high fuel costs.

"It's become critical. Carmakers are leaving no stone unturned while looking for ways to take weight out of the vehicle," said General Motors spokesman Dan Flores.

GM also unveiled in Detroit a new version of its Corvette supercar that is 110 pounds lighter than its predecessor, thanks to an "exclusive" technology for eliminating rivets to directly spot-weld aluminium components.

In Europe, where fuel is far more expensive, non-steel components are not new. Indeed, in the 1930s, the luxurious Bugatti was made with aluminium, and Audi used the material in its cars in the 1990s.

But with the Ford F150, said independent industry analyst Bertrand Rakoto, "it is new and ambitious on a work vehicle,



The all-new F-150 frame

because it will be dented and is more expensive to repair."

"You have to have a service network equipped with special tools and forms."

Pickup truck rivals were keeping their eye on Ford's move, without saying if they will follow suit.

"For our customers, gasoline is a cost. This is a work truck. Fuel costs are a very important part of their overall equation," said Ford Executive Chairman Bill Ford.

Besides the risk of alienating the builders and farmers who are traditional F150 buyers, Ford has taken a risk with aluminium itself, now cheap but with a history of big price swings that has often made steel a better alternative.

That could be a problem, said Rakoto, especially "if everyone turns to aluminium."

Not all see aluminium as the solution for vehicle weight issues, however. "There are a lot of approaches to light weight," said Art St. Cyr, American Honda's vice president for product planning. "We have used aluminium in hoods, fenders. But we have been able to achieve weight reduction with ultra-high strength steel."

Plastic, too, has proven an alternative for things like auto bumpers, because it will scrape and dent but not break in parking lot collisions.

Strong, ultra-light carbon fiber is also becoming a material of choice for some parts and trim, though it is costly.

Kia's new small sports car, the GT4 Stinger, was unveiled in Detroit with carbon fiber wheel rims and body trim.

BMW's electric i8 sports car racer is heavily built with carbon fiber, including the interior.

Alec Gutierrez, an analyst with Kelly Blue Book, said that carbon fiber would become more widespread only when the price falls. Rakoto added that another problem is how to recycle the material.

Automakers are also working with fiberglass, Kevlar and titanium. But everything comes back to cost.

"There is no silver bullet. It's not all about substituting a material for another - it's also about engineering," said GM senior executive Mark Reuss.

But he acknowledged that he was watching closely Ford's F150 experiment. ■

Metal + Metallurgy

China 2014 Exhibition, Beijing,
May 19-22, 2014

Metal + Metallurgy China will be held from May 19 - 22, 2014 at the China International Exhibition Center (New Venue) in Beijing, covering exhibiting space of 106 000 m² with 1 375 exhibitors.

Besides the exhibits of foundry, metallurgy and industrial furnaces fields, cast parts, refractory materials and ceramics have been introduced to the exhibition. Exhibitors include general equipment manufacturing, electric machinery, special equipment manufacturing, transportation equipment manufacturing, mining, instruments and meters, metal smelting and rolling processing, metal products and refractory materials.

Exhibition highlights include industrial robots - a future trend in the Chinese market. The domain of industrial robots has seen a dramatic increase over the past two years. China's market for industrial robots is estimated to rise to \$1.3 billion in 2017, expanding at a compound annual growth rate of 10% from \$810.4 million in 2012. An estimated 29 000 industrial robots were sold in China in 2012, with unit shipments to increase by about 13% per year from 2013 to 2017. By 2017, industrial robot unit shipments will reach more than 52 000 units.

For further details visit www.mm-china.com

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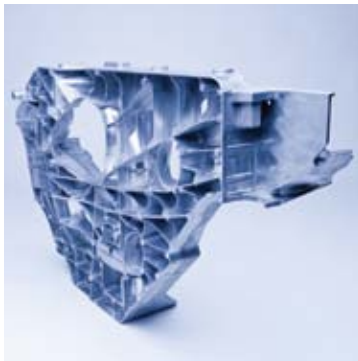
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International Aluminium Die-casting Award 2014

Winners announced at Euroguss 2014.



Cast side component for rear-axle support of BMW i3 - Alloy: Al Si10MnMg



Oil sump upper part for W12 FSI engines in the Audi A8 - Alloy: Al Si9Cu3(Fe)



BMW motorcycle crankcase for the new generation of water-cooled K5x boxer engines - Alloy: Al Si9Cu3

The winners of the International Aluminium Die-casting Award 2014 were announced at Euroguss 2014, held in Nuremberg recently. Prizes were awarded for three castings, with a further three castings receiving special commendations. It was the sixth time the competition had been held and it was organised this year by Düsseldorf-based Gesamtverband der Aluminiumindustrie (GDA), with the support of Bundesverband der Deutschen Gießerei-Industrie (BDG).

For many years, the aluminium Die-casting Award has proven to be a successful platform for demonstrating the high quality standards of aluminium die-castings. The aim of the competition is to boost interest in aluminium, a versatile material, still further and to demonstrate further fields of application. The castings have to be produced from a common aluminium foundry alloy and the assessment criteria are quality, topicality, innovation and technical progress.

This year there were 17 entries: 11 from Germany, three from Austria, two from Italy and one from Switzerland.

The six winners were:

1st Prize:

Cast side component for rear-axle support of BMW i3

Alloy: Al Si10MnMg

BMW AG, Werk Landshut, Germany

This component is being die-cast despite strong competition from a welded structure. The casting utilises topology optimisation, an innovative development technique. The resulting casting is 10% lighter than the best welded structure and thereby 10% cheaper. Incidentally, the welded component only achieves 70% of the intended level of integration. The winning entry also completely fulfils additional requirements for weldability and coatability (CDC).

2nd Prize:

Oil sump upper part for W12 FSI engines in the Audi A8

Alloy: Al Si9Cu3(Fe)

Hengst GmbH & Co. KG, Münster, Germany

The design of this casting fully utilises the specific advantages that die-casting technology has to offer: the high-grade surface helps satisfy demands with respect to service life. From a design point of view, there is an impressive integration of functions. This was achieved using complex tool and die technology. Noteworthy, too, is the large number of finished surfaces that are as-cast but only have small dimensional tolerances, thus requiring little post-processing.

3rd Prize:

BMW motorcycle crankcase for the new generation of water-cooled K5x boxer engines

Alloy: Al Si9Cu3

BMW AG, Werk Landshut, Germany

An LDS coating is used here for the cylinder bore surfaces. This combines optimal wear properties with very good heat transfer in the crankcase. Compared with the crankcase's predecessor, a permanent-mould casting, six built-in parts were replaced by an integrative die-cast component. Complex machining places great demands on the microstructural homogeneity of the die-casting.

Special Commendation:

Casing for switch electronics of industrial joysticks

Alloy: Al Si9MnMg

Georg Frank & Co. GmbH, Heilbronn

This component imposes exacting demands on both the toolmaking and the foundry technology. Casting the 74 holes spread over the six faces considerably reduces the amount of machining subsequently required. The alloy chosen ensures maximum corrosion resistance even in a marine environment.

Special Commendation:

Collector frame for a manufacturer of solar units

Alloy: Al Si9MgMn

DGS Druckguss Systeme AG, St. Gallen, Switzerland

This frame literally redefines the limits of die-casting's capabilities. The jury recognised this successful extension of the boundaries of the process. It opens up many new fields of application for this type of component.

Special Commendation:

Gearshift dome – innovative gate system

G.A. Röders GmbH & Co. KG, Soltau, Germany

Tremendous savings in raw materials and energy can be achieved by using a particularly innovative methodology for developing a gate system with an optimised volume and flow pattern. The jury recognised the contribution of the methodology to sustainable efficiency with regards raw materials and energy. Results from the German Resource Efficiency Programme (ProgRes) were implemented uncompromisingly in this project.

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- IMF: turnkey moulding plants and systems
- Mammut: crucibles
- Progetta: molten metal treatment and automation systems for grey and ductile iron foundries
- Kennecott: FeMo
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Omega launches a new range of low cost, high specification coreshooters

Omega has always been well known for its comprehensive range of no-bake moulding equipment and BZV coreshooters, but there has been the need for a low cost option to the jobbing machine range. With the forming of a joint venture in Australia with Warill Engineering, Omega had access to the Warill range of core making equipment.

The decision was made to manufacture the new range in the UK and build on the existing Warill platform, but with the additional challenge of making a low cost coreshooter with a very high specification.

The outcome was the CB series coreshooter.

By utilising Omega's lean-manufacturing systems in Peterborough and taking the Warill design to the next level the company has been able to produce a machine with the following specification:

- Compact space saving design
- All hydraulic movement and clamping
- Suitable for vertical and horizontal coreboxes
- Slide fitted as standard
- Vertical hydraulic movement of the shoot head
- Vacuum Clamping for quick change of tooling (optional)
- Touch Screen control with up to 500 recipes storage
- Air-flow fluidising chamber for intricate cores
- Heated Gassing Plate
- Shoot pressure, purge pressure and liquid gas controlled electronically from the main touch-screen interface
- Linear transducers on all hydraulic cylinders for precise and repeatable movement

Omega built the first of the new range in 2013 and sold the first machine to Gedik in Turkey. Gedik was looking for a cost effective core making option but with a high specification so this was an ideal test for the first of the new range.

The introduction of electronically controlled sand shoot, gassing and purging pressures from the operator interface was a revolutionary departure from the conventional manually adjusted pressure regulators. It is now much easier and faster for the operator to make pressure adjustments from his work station. With a conventional manually adjusted pressure regulator fine adjustments are not carried out as often as they should be which leads to the same pressures being used for almost every core box – and the resultant poor core quality and wastage of gas due to leakages from an over pressurised core box!

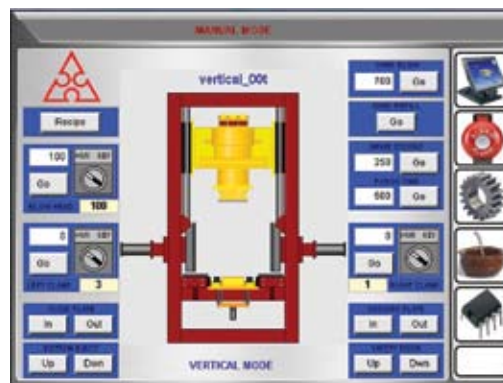
The CB series coreshooter moves the shoot head up and down hydraulically instead of the conventional table lift – this means less hydraulic force is required and therefore longer life for the hydraulic system as well as lower hydraulic system costs.

The CB series also has the option of a fluidised shoot head which aerates the sand just prior to shooting, this leads to a much greater compaction with lower shoot pressures. This has the immediate effect of reduced core finning plus the added longer term effect of less sand erosion inside the corebox.

The gassing plate is also heated, so in the case of methyl formate where condensation is a major problem in cold ambient conditions, this feature is a must. There are also added benefits when using the CO2 hardened phenolic

resin process.

The integral gas generator has a separate heater for the liquid gas and the carrier/purge air. The liquid pump uses a positive displacement gear pump with



variable speed controls (via the operator interface). The air flow through the heater is controlled by a proportional valve which is in turn controlled from the operator interface.

The considered best practice for gassing requires an initial air/vapour pressure of approximately 0.1 to 0.4 Bar - measured at the corebox. The proportional valve is then ramped up to a value of typically 1 to 4 Bar during the purging part of the cycle. The operator can set the final purging pressure or absolute value via the operator Interface.

This data along with the relevant corebox gassing parameters is then stored as a recipe for that particular corebox.

A liquid calibration feature allows the amount of liquid gas to be easily checked as it leaves the pump. The pump output can be varied via a variable speed pump motor which is in turn controlled from the operator interface.

A major problem with jobbing and low series core production is the time and effort taken when carrying out a tooling change. Omega can now offer a vacuum clamping option to the CB series so that pattern change times can be drastically cut.

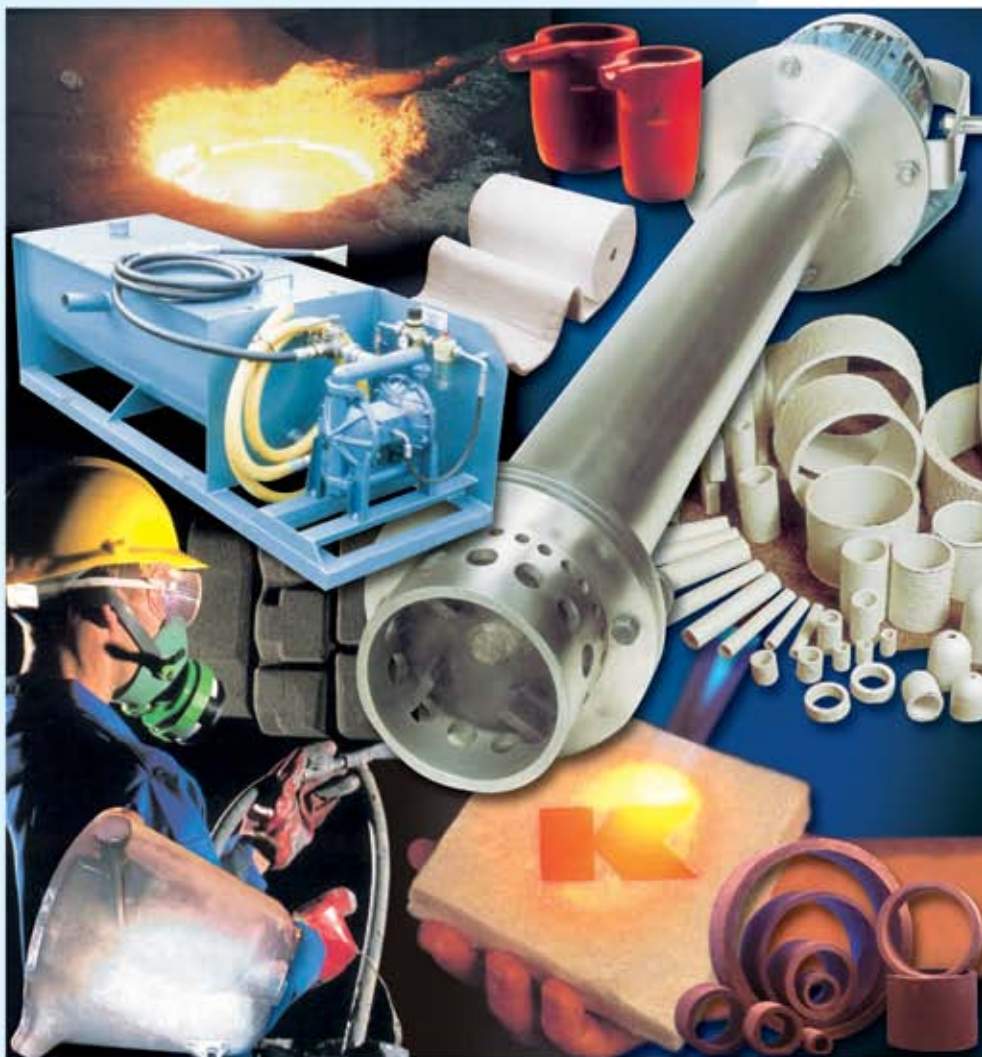
The CB series of coreshooter has a colour touchscreen interface with storage for up to 500 recipes. Each recipe consists of corebox identification, corebox left half and right half positions (useful when the shoot entry into the corebox is off-centre), number of shoots, gassing time/pump output/gassing pressure, purge time/pressure and finally whether slide or side clamps are to be included in the cycle or excluded. The interface also has auto/manual controls, real time status for all components as well as full fault diagnosis with alarms. All of these features can be password protected so that any changes can only be made by authorised personnel.

At the moment the CB range has three models – 10 litre, 30 litre and 60 litre capacity. It is planned to further extend this range as demand requires.

Mixed sand is provided separately via either continuous mixer or high speed batch mixer with multiple recipes and auto fill facility.

For further details contact Peter Petersen of Mondeco Solutions on cell 079 448 1277 or email peter@mondeco.co.za or visit www.mondeco.co.za

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Spectrotest mobile metal analyser now features Spectro metal database

Spectro Analytical Instruments now offers direct access to its Spectro metal database on the latest versions of its Spectrotest - the most powerful mobile metal analyser in the Spectro product line. Users will not only save time conducting metal assessments but will no

longer need to purchase various catalogues of metal standards. Stored in the Spectro metal database are specifications for more than 150,000 metal alloys according to international standards for steels and non-ferrous metals.

The metal database serves as a universal tool for providing detailed information about metal alloys and their mechanical properties. Among its strengths is the ability to search for suitable alloys, to identify unknown materials based on the chemical content, and to export material specifications for use on a particular spectrometer. The software supports users working with the Spectro iSORT, xSORT, Spectrotest (additional direct access), SpectroMAXx and SpectroLAB. All new Spectrotest (TXC03) analysers have a test version of the Spectro metal database pre-installed.

“For many using the Spectrotest, elemental content is not always a prime interest. For rapid inspections of incoming and outgoing goods, it is often sufficient to know whether or not the tested metal corresponds to given specifications, the delivery note is correct or the steel accurately identified,” explains Marcus Freit, Spectro Product Manager for mobile metal analysers.

Even previous versions of the Spectrotest could answer many of these questions using pre-installed grade libraries, in which common grades are stored. The materials library could also be extended with customer-specific entries.

“The Spectrotest analyses and gives the green light when everything fits or the red light when the sample being tested exceeds the given tolerances,” explains Freit.

With the new Spectro metal database,

this has been made even easier. With unknown alloys, it is possible for users to search for materials. Pressing a key starts the extended material search from the measuring screen. It is then possible to determine within which material specifications the analysis fits. By importing materials from the list of results, the alloys can be quickly and simply entered into the library on the Spectrotest.

“Of course, calling up information from a library with maybe 200 or 400 entries is much faster than comparing it with 150,000 entries in the database. The material library and the metal database complement each other perfectly.”

Spectrotest mobile metal analyser

Introduced in 2012, the current version of the Spectrotest mobile metal analyser provides outstanding analytical performance. Designed for high sample throughput, the Spectrotest analyser offers a light-weight ergonomic design and user-friendly operation. Its highly efficient plasma generator delivers several hundred measurements from a single battery charge. The instrument features a pluggable probe with an optional integrated UV optic that can be used in spark and arc mode.

In the arc excitation mode, the Spectrotest is used for, among other things, the identification of low alloy steels based on the carbon content, and in spark excitation mode, for the analysis of carbon, phosphorous and sulfur together with the identification of duplex steels based on the nitrogen content along with other applications. Its iCAL (intelligent calibration

logic) logic system monitors the state of the measuring system during operation. Proper standardisation of the Spectrotest is ensured with a single iCAL control sample.

To request a test version of the Spectro metal database contact gradebase.spectro@ametek.com.

For more information, visit Spectro at www.spectro.com or contact Spectro Analytical Instruments on TEL: 011 979 4241



Saint-Gobain Abrasives, one of the world's leading abrasives manufacturers, is the only international supplier of abrasives that manufactures each of the three major types of abrasives. These are bonded abrasives (Resinoid and Vitrified), coated abrasives and diamond products.

The abrasive products that Saint-Gobain Abrasives offers include foundry cutting wheels for the removal of gates and runner/riser systems, which are suitable for portable machines in diameters 76 mm to 300 mm and for fixed machines in diameters 350 mm to 1600 mm. The extensive range of cutting wheels is therefore capable of processing castings from the most intricate of lost wax/ investment casting to sand castings weighing many tons.

The bonded grinding products are again available for use

Saint-Gobain Abrasives

on portable and fixed machines in sizes from 50 mm to 914 mm. The bonded grinding wheel range includes products for use in heavy grinding applications capable of removing very high levels of material, as well as fine finishing applications.

The coated abrasive products cover the whole spectrum from products that give high rates of stock removal to products that can be used for fine finishing. Saint-Gobain Abrasives offers products with tough backing material and coarse grits for removing large amounts of material quickly for use in demanding power grinding and back stand applications, as well as products with flexible backings and finer grits for finish and polishing applications.

Steel and rolling mills in general have the same requirements as foundries with applications ranging from heavy

StrikoWestofen presents new Westomat series and control

The StrikoWestofen Group has redesigned its Westomat dosing furnace with a new “ProDos 3” control system. The dosing furnace was exhibited for the first time at the Euroguss 2014.

“Constant model upgrading and options developed according to customer requirements have made our Westomat series a worldwide benchmark for economical and process reliable dosing systems.

Our latest development raises the standard, in particular with regard to simplified setup and operation,” promises StrikoWestofen manager Rudolf Riedel.

“There are many cost drivers in everyday foundry operation. Besides energy consumption and metal loss, these are mainly machine downtimes and high reject rates. Against this background, the StrikoWestofen Group has been concentrating for years on offering systems which achieve maximum efficiency and process reliability.”

Westomat dosing furnaces with new ProDos 3 control

The centre piece of the company’s presentation was the new “ProDos 3” control. The new system replaces the current “ProDos XP” control in the first quarter of 2014 and will offer additional dosing precision and process reliability. Considerably improved computing power reduces the reaction time by a factor of three, thus adjusting the dosing weight to altered process parameters in a highly efficient way, according to the company.

“The most important innovation is probably the integration of our patented biscuit correction. This has proved to be an effective practical tool for improving the dosing accuracy by another 35 percent. Its direct integration into the control means that biscuit correction, as well as the standardized DISPO 035 interface to the die-casting machine are now available to all customers as economical options. Electrically and mechanically, the ProDos 3 is completely compatible with



Thanks to the ProDos 3 control system and a completely revised design, the new Westomat dosing furnace optimizes the die-casting process

the current ProDos XP and DPC control units,” explains Riedel.

“The new control system is especially resistant to electromechanical disturbances and is operated via a capacitive touchscreen.

This no longer needs to be calibrated and is effectively protected in everyday foundry operation via a pane of toughened glass. 2014 will also see the introduction of further options which can be retrofitted in the control,” said Riedel.

Slimmer furnace body

“The often extremely restricted space in foundries and around the die-casting machine is taken into account by a new furnace body. A completely revised design allows StrikoWestofen to reduce the space requirements by about 15 percent in comparison with the predecessor model. The slim dimensions allow the dosing furnace to be positioned closer to the die-casting machine.”

“The shortened inlet cools the melt down less than before. Also, contact with the oxygen in the air is reduced, and this supports a very high metal quality. Another aim of re-designing was to increase occupational safety,” explains Peter Reuther, Sales Director Europe at StrikoWestofen.

“The new Westomat dosing furnaces have an innovative heating system with an extended service life. In addition, assembly no longer requires any space at the side of the furnace. Our flanged riser tube – now available as standard equipment – and the high-performance insulation have allowed us to significantly increase the performance of our dosing systems yet again.”

For further details contact Ceramic & Alloy Specialists on TEL: 011 894 3039 or visit www.ceramicalloy.co.za ■

foundry products

applications that demand fast high volume metal removal rates, to finer finishing. Again, the company’s product range is capable of satisfying all your requirements, whether it be on bar, billet, sheet, wire, internal/external tube or pipe cutting and grinding.

The company has gained significant expertise in the foundry applications by conducting thorough analysis of the complete abrasive process to help maximize productivity. All of the company’s steel and foundry products are manufactured and tested to the highest quality and safety standards. They offer full technical support to ensure that products are used in the correct applications ensuring cost effectiveness and safety is achieved in application.

For further details contact Saint-Gobain Abrasives on TEL: 011 961 2000 or visit www.saint-gobain.co.za ■



Efficient filtration in steel and iron castings

Udicell™ – tubular foam ceramic filters for steel and iron castings.

Due to the increasing demands on the quality of today's castings, especially large and heavy section castings, effective and above all safe filtration during the casting process has become essential. The use of traditional filters in a standard round or square plate shape, however, led to restrictions and safety risks manifesting themselves in the form of filter fractures. Through extensive research and development, ASK Chemicals has succeeded in modifying the filter geometry – now using ceramic foam filters in a tubular design to prevent the above-mentioned restrictions and risks.

Initial attempts together with a well-known German foundry showed significant advantages over conventional plate-shaped filters. The risk of filter fractures was significantly reduced, while at the same time handling has been simplified, and an increase in effective filter area was created. In addition, the end faces of the tubular filters are completely closed by using



the same material, so that a breaking of the upper and lower edges and the risk of inclusions of the filter material in

the mold cavity is effectively eliminated. Simultaneously, because of its extremely compact design, a structurally strong filter has been created. Tests have shown that the filter structure during a load of several tons of liquid metal had absolutely no distortion, deformation, or cracks.

Value-added design

Udicell™ tubular foam ceramic filters are perfectly suitable for the secure filtering of large quantities of liquid metal and feature a unique, value-added design. The advantages of this design include more than three times the filter area compared to a conventional plate-shaped filter of the same size, a self-supporting geometry, a minimized risk of filter breakage, a compact structure, and a quick and easy installation.

Universal housing for steel and iron casting

In addition, a universal housing for this filter type has been developed which can be used both in iron and steel casting. The geometry of the tubular filter was exploited by designing a very small and compact housing. This concept includes the use of only one tubular filter per housing, reducing the complexity and number of components necessary for effective filtration while improving the safety and stability of the system. Based on the superior design of the tube filter and housing, the risk of filter breakage is practically eliminated. With this complete system, the caster has a safe, easy-to-use and effective tool for filtration of large amounts of liquid metal.

Applied Casting Solutions represent ASK Chemicals in Southern Africa. For further information contact Applied Casting Solutions on TEL: 011 922 1701 or visit www.chemsystems.co.za or www.ask-chemicals.com ■

Bruker G4 Icarus carbon / sulphur analyser

For rapid and precise carbon and sulphur measurements the G4 ICARUS HF, using the combustion method with high frequency induction furnace and infrared detection, proves highly effective especially with metallic materials and also with inorganic materials like cement, clays and many others. The solid sample, placed in a ceramic crucible together with accelerator material, is combusted in the high-frequency furnace in an oxygen stream.

The carbon and sulphur components in the sample are oxidized to release CO₂ and SO₂ respectively. These measuring components are swept by the carrier gas O₂ to the solid-state NDIR detector system of maximum selectivity and stability.

The analyser is equipped with two measuring ranges for both CO₂ and SO₂ with automatic base line compensation (Automatic Level Control - ALC) and automatic optimum range selection. The calibration of the analyser is made by means of certified reference material.

The innovative design of the combustion area with the gas outlet positioned directly on top of the ceramic crucible for assisted removal of the formed metal oxide particles, leads to drastically reduced contamination of the quartz combustion tube by dust and slag. The integrated system pressure control and electronic flow regulation enable a fully automatic leak test, which can be invoked via the software.

The analyser is characterized by an easy operation and automatic evaluation by means of an external PC. During the analysis, all detector signals are displayed in real-time on the graphic screen. The analysis



results together with the analogue detector signals and the complete set of parameters are displayed on the screen and stored. The complete data records can be transferred to an external computer system.

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 or visit www.imp.co.za ■

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Koralkote ZMG

Precision and accuracy has always been a critical consideration in high-end castings. Koralkote ZMG from Applied Casting Solutions is a spirit based, high Zircon content, penetrating coating for moulds and cores. Koralkote ZMG is ideal for high temperature castings in steel and stainless steel where a smooth finish and fine detail is required. Improved rheology ensures an increased surface coverage for spraying, brushing, swabbing and flood coating.

Improved Formulation

- ▶ High Zircon content in excess of 70%
- ▶ Increased surface coverage
- ▶ Improved mould and core surface finish

Enhanced productivity

- ▶ Suitable for all application methods
- ▶ Reduced fettling and shot-blasting costs

Applied Casting Solutions are dedicated to doing all we can to enhance the quality of your castings. Where precision and productivity are key issues you can rely on our products and services to give your foundry the competitive edge.



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