

Fusion

Newsletter of the Southern African Institute of Welding

September 2013



PRASA Passenger Coach Building Programme



NDT an important focus area **PG6**

The 65th SAIW Annual Dinner **PG8**

Important Announcement from the
SAQCC CP / IPE Certification
Committee **PG13**

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Message from The Executive Director

The future of welding is closely linked to the manufacturing industry which is currently showing no signs of real growth. There are a wide variety of reasons why manufacturing is suffering and it is somewhat surprising just how stable the welding industry has been and how there is continuous development of new applications and techniques. Part of the reason is that most developments focus on technical improvements which contribute to increased productivity and quality in the manufacture of welded products. There are increasing moves towards de-skilling, manipulation and automating the welding process as well as having greater control of the welding arc. The technical focus of welding is already at a high level and it is increasing. There are many issues in the macro-environment to deal with, but welding remains a challenging and exciting industry to be in and offers a wide scope of national and international career opportunities.

Teaching and training for the welding industry is also facing changes. We have to address the traditional but still important skills and knowledge requirements but we also have to address the areas of future growth and development. An important part of the challenge in training is the introduction of new training methods. These are increasingly important, especially as it costs approximately R 1000 per day to train a welder and this excludes the cost of depreciation and any possibility of profit for future investment.

Amongst the latest developments in teaching techniques are the welding simulators used for training welders. It is a matter of time until the price of simulators comes down to the level where they eventually become the foundation model for all basic welder training. In other areas, e-learning is also starting to find application and there is an improving amount of well-developed visual material suitable for this type of training. In a technical field such as welding it is certain, at least for the immediate future, that e-learning will need to be blended with face-to-face teaching time, but we are not at all far away from the point where laptops or tablets are an essential student tool. For SAIW the development of e-learning material and its introduction into our courses are amongst our next most important steps in making sure the Institute can keep abreast of industry needs.

Whilst there are many changes in the industry there is one underlying factor that permeates every facet of welding and that is safety. It has to be kept in mind that there are

two aspects of safety; the safety of the welding operations and the integrity of the welded product. In the former case it is possible that, with the developments taking place, the hazards may change and can even be lessened; but they exist, either in the process of welding or in the environment in which welding is used. At SAIW, safety has always been an integral part of all courses. Currently, however, more attention is being paid to ensure safety officers and safety specific personnel have the knowledge needed related to welding operations and a new safety course is being launched to assist in this process. In the latter case of integrity of welded product, it is tackled through many avenues. Training courses are constantly updated and research and development is on-going. The new testing laboratory at SAIW is testament to how seriously SAIW and the industry are taking quality and the resultant safety in welding.

There is also an increasing use of quality programmes and certification. SAIW Certification has certified over 55 companies over the last couple of years and is receiving new requests for certification regularly. This indicates that quality and integrity have become areas of focus in industry. To achieve improved quality and integrity requires more qualified people to be involved in the manufacturing process and industry is well served by training institutes fulfilling the theoretical and practical training needs of technical people – the Universities of Pretoria and Witwatersrand, SAIW and other IIW Approved Training Bodies.

With improving standards, good training and new technologies and techniques the future of welding is bright.



Jim Guild

Executive Director
Southern African Institute of Welding

PRASA passenger coach building programme

The Passenger Rail Agency of South Africa (PRASA) has been charged with changing public perceptions and transport use in South Africa. The objective is to move railway to a position of the preferred mode of transportation for mass personal movement. In order to do this transportation needs to be reliable and safe, as well as fast, efficient and comfortable. PRASA's critical objective over the next few years is to upgrade the existing passenger rail network. Existing coaches are on average 40 years old, utilise even older technology and are beyond economic refurbishment.

The choice was made to renew the stock progressively. PRASA seeks to facilitate the manufacture of an estimated 7 224 Metrorail passenger coaches nationally in order to meet the passenger demand over the next 20 years. It has been many years since South Africa produced rolling stock including passenger coaches. According to PRASA, little

or no maintenance has been undertaken for 20 years and existing coaches are therefore not worth further capital investment and are unsuited to modern designs. Demand of 7224 coaches represents about 90 000 tons of aluminium or 180 000 tons of stainless steel. Over the 20 year programme, averaging 360 coaches per year, an average of 4 500 tons aluminium or 9 000 tons stainless steel per year will be utilised. The wide aluminium extrusions that make up half the aluminium mass would need to be imported or replaced by narrower, locally supplied extrusions. Refurbishment and repair of accidental damage will add volume.

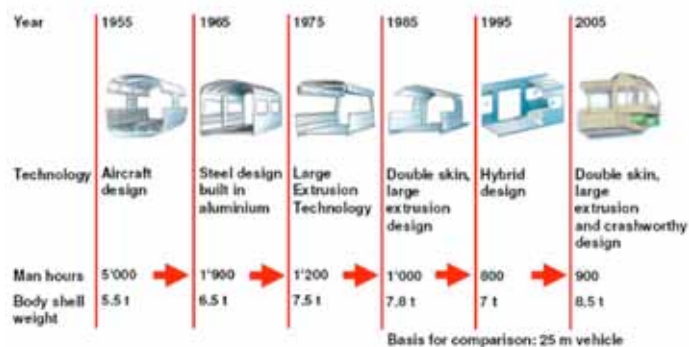
The project has gone out to tender. Gibela Rail Transport Consortium (Alstom-Actom), (GRTC) awarded the contract for half the coaches of the 20 year project. The full contract value is R123 billion. There is a 65% local labour content requirement intended to contribute towards enabling both skill

development and resolving the challenge of chronic unemployment. The use of rail for the transport of goods and passengers has declined significantly over the past twenty years. Another tender requirement is a welding centre associated with 65% localisation. The National Industrial Participation is an approach that seeks to leverage economic benefits and support the development of South African industry by effectively using the purchasing power of Government procurement.

The NIPP programme is mandatory on all government and parastatal purchases or lease contracts with an imported content equal to or exceeding US\$10 million. NIPP business plans are intended to generate new or additional business activities through one or more of the following; investment, export, job creation, increased local sales, SMME and BEE promotion, R&D and technology transfer. Welding forms part of such activities, but has to achieve the required fabrication



Development of Rail Car Design – Manufacturing Time and Body-Shell Weight



standards. Quite apart from the production welders, a team of supervisors, NDT specialists, inspectors and welding technologists and engineers will be required to implement the PRASA programme successfully.

Welding will be required for the manufacturing of coaches, rails and bogeys. Requirements include the welding itself, the consumables associated with welding, non-destructive and destructive testing, weld procedures, inspection and technology and engineering management. A key issue affecting all is that the welded joints need to be suited to fatigue conditions. This implies a competent weld which meets fatigue life expectations at any specific joint. Training for statically loaded structures where strength is the key consideration is different, therefore some elements of current training may require consideration.

The fabrication of coaches requires welding to meet fatigue conditions and a life of 25 to 40 years. Advances in design modelling, material property predictability and welding science and technology have resulted in

tighter design limits and, as a result, lighter coaches which also transport passengers safely. Much design optimisation has been achieved in overseas countries. However, coach design for South Africa must relate to local operating conditions. It may prove true that our operating conditions mirror or overlap other countries' operating conditions which, given their development of a successful design, would assist. It has to be kept in mind that PRASA is on record as saying that maintenance of coaches and track over the past 20 years has been minimal.

Whilst the overall project is a large scale project, a high degree of automation is anticipated. The project is very suited to mechanisation and automation. Whilst training will need to be specifically targeted to the need to produce passenger coaches to operate under dynamic conditions, it seems likely that only two to four specialised factories would be involved.

The next phase will be the construction of new routes and rail infrastructure. Rail tracks are at the heart of an effective rail service.

Apart from the fact that coaches can only go where there are rails, the tracks need to be heavy enough to withstand the applied loads, tough enough to withstand the fatigue and wear characteristics and, also, particularly, represent the correct geometry. Correct geometry implies correctly spaced, level with each other (or, for corners, inclined as required) and with adequate joint configuration. As rails are prudently in finite lengths they are welded together to form long track lengths which, whilst accommodating thermal movement through a combination of sleeper constraint and periodic breaks, give a smoother ride and reduce slamming impacts and wear on tyres.

If the joint is misaligned, either vertically or horizontally or is skew, unintended stresses may well arise. Whilst the country has an extensive network, the maintenance of the rail track too has declined over the past two decades. The likely impact on passenger coaches is higher stress and slower safe speeds. To meet the objectives, the existing track infrastructure will need attention. The existing track refurbishment of over 20 000km is therefore an important part of the project. Whilst not all of this needs to be refurbished to accommodate the passenger coach project, the availability of a good track system is inherent in meeting Government objectives of reversing the decline in use of rail for goods and for passengers.

“SAIW is gearing up to assist and support industry to fulfil on the demand created by the PRASA project,” says Jim Guild, executive director of SAIW. “Extra resources will be made available, training will be provided and knowledge sharing and information will be available. This is a milestone in passenger rail investment which will see a significant change in the quality of public transport as a whole”.



WADE LESSING – Bohler Uddeholm

Having grown up in Natal for the first 10 years of his life, Wade Lessing is through and through a Johannesburger. He matriculated at Dawnview High after having attended Assumption Convent in Natal, Maritz Brothers College Observatory and St Benedict's College in Bedfordview. Wade grew up in the time when young boys still had to do national service, but after completing his service he qualified as a fitter and turner through Illman Plastics and completed N3 to N6 at Germiston Technical College. He also completed various sales

and marketing courses through Damelin Technical College.

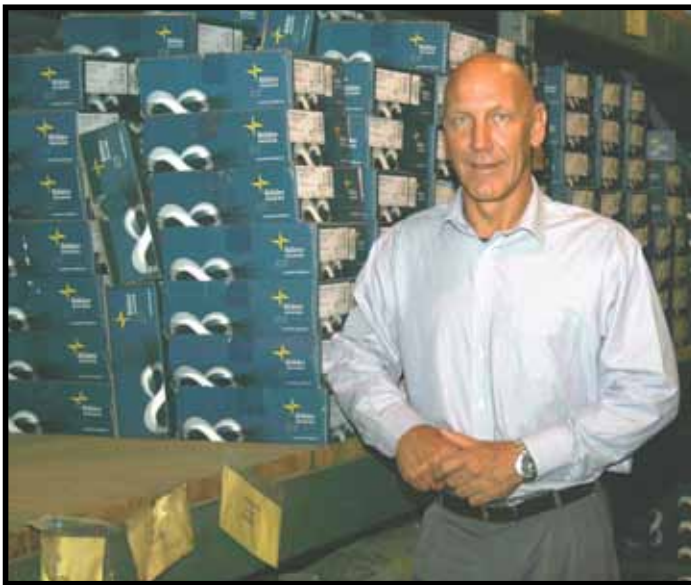
Lessing had an illustrious career that started with doing his trade at Illman Plastics. He then worked for Drury Redman selling machine tools, before joining Nordberg as sales engineer and was promoted to branch manager Durban within Nordberg in 1995. He moved back to Natal for a short while as branch manager for an Afrox company, Dowson and Dobson. When he returned to Johannesburg

body of SAIW for welders.

“Throughout my entire career I have worked in companies which offer South Africa some form of product or service,” says Lessing. “Bohler Uddeholm currently has a welding division supplying welding consumables to South Africa from Europe which is a globally accepted quality product and the glue for many components and products used in South Africa. My career will continue on this path into the future so that I can make a positive contribution to our beautiful country.”

The good news for the ladies is that Wade is not married yet. He races pigeons in his free time and enjoys motocross off-road trail riding. He goes to gym regularly and enjoys keeping fit and healthy. Lessing says that “hard work brings good luck. Anything you do today will benefit or hold you back in the future. Principle cantered actions are key to success in the future and will always win the day”.

He warns that the welding industry today is fast moving towards healthy improvements on quality and correctness. The standards set by the likes of the International Institute of Welding must be followed with the help of welding consumable manufacturers who test the boundaries and work towards improvements. “Standards in welding training and product development must be embedded in the DNA of the industry and run throughout the supply chain. We are a little behind our global counterparts and need individual effort to grow the industry in South Africa into an asset”.



Changes in Training Administration

SAIW has seen a huge increase in demand for training. More than 1000 learners have received training at SAIW during 2013. It was therefore necessary to make some changes in the training administration processes. Michelle Warmback, administration manager at SAIW, moved training administration under her wing. Learners are now assisted by a team of efficient employees.

Should a potential learner be interested in taking one of the many career enabling courses at SAIW, they can contact the training administrator, Laetitia Dormehl at dormehl@saiw.co.za or the student liaison officer, Rebecca Motloung at admin@saiw.co.za.

The team is further assisted by Lillian Pin, the account administrator, Jean Scholtz, accounts assistant and Elizabeth Shole, the accounts clerk. Of course the two print room assistants, Lilly Redebe and Selinah Seane cannot be forgotten. The team is overseen by Michelle.

“When learners require help, everybody in the team pulls together to assist them,” says Lillian. “We work as a cohesive team in a happy atmosphere”. Michelle adds that learners can contact them for any administrative or accounting issue. “We are just a phone call away”.



NDT AN IMPORTANT FOCUS AREA



There are people who dedicate their lives to non-destructive testing and rightly so. When welding fails lives are lost.

Ben Beetge from SGS South Africa started his NDT career in 1980 at Iscor (now Mittal Steel) in Newcastle during which time he was enrolled to attend short courses at the Pretoria Technikon in ultrasonic and radiographic testing. Shortly afterwards the promises of

contract work tempted him to join an inspection company performing NDT on the construction sites of Sasol 2 and 3. As is the normal situation with contract work, he was forced to change employment when the inspection contract came to an end, and was fortunate to be employed by Ical (Pty) Ltd in their manufacturing workshop in Alrode. The Ical involvement in power generation with the building of the Lethabo and Kendal power stations allowed for a vast amount of experience to be gained.

During this time the SAQCC (NDT) was established at the SAIW and Beetge was amongst the first recipients of SAQCC (NDT) certificates issued. Simultaneously he was enrolled in other NDT courses at the SAIW, and received further SAQCC certificates which became the industry standard in NDT qualifications. Beetge was employed by the SAIW in 1987 as technical lecturer and consultant. The next ten years were very exciting, resulting in a very steep learning curve for all involved in NDT having to keep up with events around the Mossgas project. SAQCC (NDT) qualifications became the requirement for all Eskom related work and the training and qualification business entered a new era based on international requirements, such as ISO 9712.

Beetge was afforded the opportunity to obtain his NDT Level 3 qualifications from the American Society of NDT (ASNT), which advanced his career substantially. He was offered the opportunity to become involved in the equipment supply side of NDT, and having been involved in training and examination, decided that it will increase his scope of NDT in general. He joined the Agfa Industrial division, which was later acquired by General Electric Inspection Technologies. In 2007 he joined De-Tect Unit Inspection to pursue a career as an NDT Level 3 practitioner. However, as a non-

practicing NDT professional during his tenure at Agfa Industrial, Beetge had to rewrite his ASNT Level 3 examinations as they lapsed after five years of non-involvement. This requirement resulted in his returning to ASNT in Columbus, Ohio to write all the required examinations once again. With successful results in hand Beetge re-entered the NDT market in 2008 as a qualified ASNT NDT Level 3 practitioner.

“My involvement with NDT and the South African qualification and certification committee comes from a passion for training and examination that kept me in contact with the SAQCC (NDT) after I resigned from the SAIW. I was elected as a member of the main committee and the examination/moderation and technical committees,” says Beetge.

For people who want to get involved in NDT Beetge's advice is to find a reputable NDT company to work for. There have been some major acquisitions by international NDT companies during the past two years bringing exciting opportunities to the South African market. NDT is an exciting, growing and high technology career field that is filled with opportunities that are highly rewarding. The 2011 edition of ASNT recommended practice SNT-TC-1A recognises 15 NDT methods with three levels of qualifications in each method, providing ample scope for an individual to select and establish an exhilarating career. With advanced techniques driven by computer technology being in high demand, individuals are enabled to specialise in techniques like phased array or time of flight diffraction ultrasonic testing, or enter the challenging field of research and development.

Beetge is married to Martie, they have one daughter and are eagerly awaiting the birth of their first grandson, Reuben, early in January 2014. He loved flying micro light aircraft for many years, but lately sticks to riding his adventure motorbike. Beetge enjoys the outdoors, and as an amateur photographer enjoys taking photographs of wildlife and aircraft.

Beetge's final word of advice is never to stop setting goals. “You have to have a reason to get up in the morning, you need a reason why you continue to handle the negative aspects of the business on a regular basis, and you need to be an encouraging contributor to an industry that served you well during your own career. Being a strong believer that my Creator will always provide, a fair share of good luck, and being in the right place at the right time are essential contributors to a successful career”.

SAIW to become a co-signatory for ICNDT Mutual Recognition Agreement

SAIW will become a co-signatory to the International Committee for Non Destructive Testing (ICNDT) Mutual Recognition Agreement for Certification Bodies. This will further enhance international recognition of the South African Qualifications and Certifications Committee (SAQCC) for NDT as well as professionals certified by SAIW. Jim Guild, executive director of SAIW, will be attending the meeting of the Certification Executive Committee of ICNDT in October as the representative of the African Federation of NDT (AFNDT).

“Whilst SAQCC NDT has always had good recognition from countries throughout Africa, Asia and Australia, SAQCC NDT will now be a widely recognised international body,” says Guild. The objectives of this Mutual Recognition Agreement (MRA) are to promote harmonisation and the mutual recognition of NDT personnel certification schemes in the member states and to facilitate cooperation among National Certification Bodies, while promoting acceptance of certificates meeting ISO 9712:2005 standards issued in different countries. The agreement will also promote uniformity in NDT training and examinations.

Parties to the MRA must have a National Certification Body (NCB) recog-

nised by the National NDT Society or a relevant national body and must be members or associate members of the ICNDT. Parties will be responsible for pursuing the objectives of the agreement and recognising and assisting certification schemes that have been accepted as co-signatories.

During the Asia Pacific Conference on NDT in Mumbai in November 2013 the ICNDT Policies and Procedure working group will meet. This working group formulates the policy and implementation of ICNDT developments. Harold Jansen, NDT manager at SAIW, will represent AFNDT at both the conference and the ICNDT meeting. The conference will focus on safety and reliability through innovative, robust and cost effective technologies. The theme of the conference will be ‘Excellence with Relevance’. The conference will also sport an exhibition with over 100 exhibitors.

“It is encouraging to see that global collaboration is increasing and that there is a move towards standardisation in the industry”, says Jansen. “Being a co-signatory to the ICNDT Mutual Recognition Agreement is an important milestone for the African Federation of NDT and will hold many advantages, of which global recognition is only one”.

THERMAL SPRAY ASSOCIATION OF SOUTH AFRICA (TSASA) UPDATE

Over the last two months much has been done to establish the TSASA. Monthly meetings have been well supported and a strategy subcommittee was formed to develop a business plan and business model in order to drive the sustainability of the Association. The vision of the organisation is to be an advisory body and independent authority that exists to improve quality standards and enhance education and knowledge sharing throughout the Thermal Spray industry. In such, the TSASA will set quality standards for the industry and communicate such standards to all members. It will work towards expanding industry knowledge, providing education and ultimately towards improving the reputation of Thermal Spray as a product and service in the market. A library of information will be developed and shared, while the TSASA will provide technical know-how and support to industry.

The objectives of the TSASA are to ensure that the Southern African thermal spray offering and usage is on par with that of the rest of the world and to promote and assist in research and development in the Thermal Spray offering. The TSASA will promote Thermal spray as a coating solution and focus on safety improvements for both operators and the environment. Through these efforts it is hoped that standardisation will be enforced and that an integrated advisory program will be developed.

The Association will be managed under the auspices of SAIW and an Association Manager will be appointed. The Association Manager will report to the board that will consist of subcommittees such as a strategy committee,

finance committee and marketing committee. The first responsibility of the manager will be to harness the interest from thermal spray job shops, suppliers to the industry, academic institutions and end users. A seminar is planned for early 2013 to raise interest and knowledge in this hi-tech industry.

The business planning and strategy committee will consist of Sean Blake, Bob Wilmot, Dr Jan Lourens, Hennie van Rhyn, Devin Rist, Andrew Mackey, Rene Hefti and Wayne Steenekamp. The committee will be assisted by Dr Frances Wright on strategy and marketing.

Corporate, SME and individual membership will be available and membership will be open to metallurgical industries as well as mining, oil and gas, paper and pulp, construction, petrochemical, power generation, laser and plasma transferred arc industries. The culture of the association will be inclusive and therefore membership will be open to all users and suppliers of Thermal Spray or variations thereof such as plasma spraying, wire arc spraying, flame spraying or high velocity oxy-fuel coating (HVOF) spraying.

The spokespeople for the TSASA will be Sean Blake from SAIW, Devin Rist from FE Powders and Dr Jan Lourens from ThermaSpray.

For more information, or to attend the November 2013 TSASA meeting, please contact Sean Blake at blakes@saiw.co.za.

UPCOMING EVENTS



66th IIW Annual Assembly and International Conference

The 66th IIW Annual Assembly and International Conference will be held in Essen in Germany from the 11th to the 17th of September 2013. Delegates to the conference will have unique opportunities to network with the IIW family and discuss matters pertaining to the joining industry. The IIW Annual Assembly 2013 will also offer an exhibition at the international trade fair SCHWEISSEN & SCHNEIDEN, drawing exhibitors from all over the world. Over 1000 exhibitors are expected from more than 40 nations which will present a complete overview of the latest developments and innovations on all matters pertaining to joining, cutting and coating.

Topics discussed during the conference will include:

- Automated applications in welding technology
- Automated welding technology processes in the whole product lifecycle
- Automated welding technology processes – part of the virtual and actual production
- Automated processes with optimised upstream and downstream process flows in welding technology
- Automated processes for material and structural optimisation
- Automated processes for accelerated capital intensive production

SAIW will be represented by Sean Blake and Thulani Mngomezulu. "We are looking forward to the trip to Essen," says Sean. "It is a golden opportunity to network, learn and share information".

Certification Dinner

The next Certification Dinner will be held at Gold Reef City on the 4th of October 2013. Certificates in courses such as Liquid Penetrant Testing level 1, 2 and 3, Magnetic Particle Testing level 1 and 2, Ultrasonic Testing level 1 and 2, Ultrasonic Testing, Wall Thickness testing, Radiographic testing level 1 and 2, Radiographic Interpreters and Welding Inspectors level 1 and 2 will be awarded to 131 learners. Certificates will also be awarded for ASME Codes of Manufacture and Painting Inspectors. Furthermore, students will be certified for Boilers, Pressure Vessels and Inspection of Pressure Equipment.

As with all SAIW functions, the evening promises to be enjoyable and a celebratory occasion, with learners being equipped to embark on a lucrative career.

AFNDT ANNOUNCEMENT

Cameroon has indicated that it is not able to host the African Federation of Non Destructive Testing (AFNDT) conference scheduled to be held in 2015. Next on the schedule list is Algeria and it has therefore been agreed that the conference will be moved to Algeria and will be scheduled for the first quarter of 2015. This will probably mean that the Presidency of AFNDT will pass from Bakoura Moussa of Hydrac to Mourad Zergoug of Centre de Recherche Scientifique et Technique en Soudage et Soudure in the near future.

The AFNDT constitution is currently under revision and will be finalised at an AFNDT meeting to be held in South Africa in January/February 2014. A proposal for each country to be able to have a two member organisation is included in the draft revision.

SAIW will keep everybody updated. Please see Fusion and the SAIW website (www.saiw.co.za) for further details.

The 65th SAIW Annual Dinner

held at Gold Reef City Casino



As always, the SAIW Annual Dinner was an illustrious affair. Professor Madeleine Du Toit, the SAIW president, having been called a “normal professor” by MC and comedian Mark Lottering, welcomed everybody at the event and congratulated the award winners. She specifically welcomed past presidents including Robin Williamson, Willie Rankin and Andy Koursaris for attending and for their contribution to welding in general.

Mr Tom Rice said grace and the delicious food of a smoked chicken starter, Beef Wellington for main course and black cherry and dark chocolate terrine desert was served while the Nubia group entertained the audience with cover songs from, amongst others, the Carpenters.

The highlight of the evening was when Mr Johan Pieterse, from Afrox and a councilor of SAIW, assisted by Prof Madeleine Du Toit, presented the awards. Before the formal awards part of the evening Johan mentioned the Young Welder of the Year competition which was held in January 2013. Many of the sponsors of the YWOY competition were present and he thanked them for their involvement in the competition. Houston Isaacs, the winner of the YWOY competition was the first person ever to win best young welder in carbon steel, stainless steel and aluminium as well as being the overall winner. He represented South Africa in the WorldSkills competition in Germany in July where he performed well and gave South Africa its best result so far. Houston was awarded a gift of appreciation for his efforts during WorldSkills 2013.

The next award given was the SAIW President’s award for NDT. This year’s winner is an Eskom student who achieved an outstanding average mark of over 90% in the examinations for four surface and volumetric test methods at SAQCC NDT Level 1, Khutso Moahloli. The Phil Santilhana Award was presented to the best student on the Institute’s courses in Welding Supervision and Inspection, Charl Brazelle. Charl achieved distinctions, which are awarded for average marks of over 80%, in his welding inspector level 1 and 2 examinations.

The third award, the Harvey Shacklock Gold Medal, was given to the author of the best technical paper presented at an Institute event. BOC and now Afrox, part of the worldwide Linde Group, generously donated a gold medal for the award. The 2013 award goes to Corney van Rooyen of CSIR-NLC, and his co-authors Herman Burger also of CSIR-NLC and Prof Madeleine Du Toit of the University of Pretoria. The Harvey Shacklock gold medal was presented to them for their paper entitled ‘Laser metal deposition microstructure of modified low-C

martensitic stainless steel’, which was presented at the IIW Regional Congress in November 2012.

The final award for the evening was the Institute’s Gold Medal Award which was introduced in 1966. It is the Institute’s highest award and is given to a company or an individual in recognition of outstanding contributions to welding technology or to the Institute. This year the award is being made to Steinmuller Africa. Steinmuller is a multi-service provider to the local power generation, petrochemical and allied industries. In 2012 the company celebrated 50 years in the local market. Steinmuller Africa is a member of the international Bilfinger Group and stated that its core business is welding.

Steinmuller has a facility in Pretoria for the fabrication of equipment. This facility is currently primarily manufacturing boiler components for the Medupi and Kusile power stations. The company has expanded its operations, acquiring KOG Fabricators and integrating this company into the parent company. Steinmuller Africa has also been instrumental in the refurbishment and commissioning of the Simunye power stations to return them to service following many years of being mothballed.

Steinmuller Africa has been nominated for the following contributions to the welding industry in South Africa; firstly its commitment to skills development in South Africa, having established three welder training academies that produced 32 qualified artisans to date, welders have a red seal qualification as well as relevant welder qualifications (coded welder) on completion of the programme. There are currently 165 students in training, being extended to 180 in 2014. Eduardo Construction, which is part owned by Steinmuller also has two training facilities, one in eMalahleni and one in Vanderbijlpark. Both of these facilities have been authorised as IIW Approved Training Bodies for training to the IIW International Welder Scheme. The company also provides extensive training opportunities for welding inspectors and welding specialists further demonstrating a commitment to skilling its personnel.

The second contribution which led to nomination was the implementation of the ISO 3834 based quality management system throughout the organisation. Steinmuller has achieved ISO 3834 certification at both the Pretoria and Alrode Works, but it has gone further and had more than 12 construction sites on power stations and other major plants certified as well. Anyone in the construction business will appreciate that offering sites up for independent scrutiny by technical

auditors takes a degree of courage and belief in your control of the welding operations.

Thirdly, the introduction of new technology in South Africa was a significant contribution. Steinmuller Africa developed welding procedures for welding of advanced materials for boiler components. It has also introduced automated membrane panel welding and automated welding for nozzle attachments. In addition, it is developing explosion welding in conjunction with TEI from the United Kingdom. Lastly, Steinmuller Africa was nominated for its community involvement, having established a welder training school in Diepsloot to provide people with skills to sustain themselves.

In SAIW's 65th year, it is a pleasure to present the award of the Institute's gold medal to an outstanding company. Mr Moso Bololo, director of engineering and business proposals for Steinmuller Africa received the gold medal on behalf of Steinmuller Africa.

SAIW is greatly appreciative of the contribution made by the sponsors, as without them this event would not be possible. Thank you to Air Products, ESAB, Group Five, Afrox, Babcock and TUV. We look forward to the 66th Annual Dinner, and thank all that attended, making it a fun evening of networking and socialising over some Douglas Green wines sponsored by Messer Cutting Systems, Castolin Eutectic, Lincoln Electric, Welding Alloys Group and Bureau Veritas.

Golf days



As always, the 2013 SAIW golf days were enjoyed by all. The Johannesburg golf day was held on the 28th of May at the Royal Johannesburg Golf Club, where 52 golfers enjoyed the day of golfing and networking. The winners were Laser Cut Varios; Donovan Richards, Andrea van der Westhuizen, Kevin Nell and Dijon Tintinger. Thanks to the sponsors - Babcock, ESAB, Laser Cut Varios, Messer Eutectic, Afrox and Messer Eutectic - everybody had a great day, ending in an award ceremony in the evening.

The Durban golf day was held on the 23rd of July at the Royal Durban Golf Club. Forty six players fought for the day's title which was taken by AED Gas & Welding; Bala Naidoo, Lesley Govender, Bolton Misra and Danny Moodley. The players thank the sponsors AED Engineering, Bohler Uddeholm, Sebata Institute, Natal Inspection Services and Mentis Sales for a wonderful day.

Everybody is looking forward to the 2014 golf days.

SAIW Material Testing Laboratory Launched

Being dedicated to furthering standards in welding fabrication and related technologies, SAIW launched its new testing laboratory on the 19th of July 2013. Mr Sean Blake, technical manager at SAIW, says that the laboratory is long overdue and that it is only through hard work and help from the sponsors that it can now eventually be launched.

There are various Material Testing Services that will be rendered, such as mechanical testing, failure analysis, research and development, welding consumable evaluation, weld procedure qualification, welder qualification, post weld heat treatment and positive material identification.

The laboratory boasts top of the range equipment such as a 450 joule MTS Charpy impact test machine, a Wilson Rockwell hardness testing machine, an emcoTEST Durascan 70 for Vickers hardness testing, a MTS Criterion 64.305 for tensile and bend testing and a Bruker Q2 Ion spectrometer for chemical testing. It also has a Bruker S1 Titan XRF analyser for X-Ray Fluorescence analysis (XRF) and a Bruker Phoenix diffusible hydrogen analyser for Diffusible hydrogen analysis. The Nikon microscope MA-200 for Microstructural evaluation is the pride and joy of the testing laboratory team of qualified metallurgists, and is used to evaluate the metallic phases of the material, the structure and morphology of the cast structure and grains, cleanliness of the material and any micro-defects in the materials.

The laboratory was officially opened by Prof Madeleine Du Toit when she cut the ribbon to open the door. Prof Du Toit commends SAIW for the foresight in developing the testing laboratory and the support it renders to the industry. She is proud of the team of skilled people involved with the laboratory.



Welding of titanium and its alloys

- Part 2

By Gene Mathers

Titanium and its alloys are remarkably resistant to the cracking problems experienced by many of the other alloy systems. Solidification and liquation cracking are virtually unknown and what could perhaps be called cold cracking occurs generally only because of embrittlement arising from contamination, as discussed in Part 1.

Porosity is the commonest problem, particularly when close square butt joints are used. It is generally attributed to hydrogen and cleanliness is therefore crucial in eliminating porosity. The porosity may be of one or a mixture of two types; firstly micro-porosity formed within the arms of the dendrites during solidification and secondly, larger pores that often align themselves along the weld centre line.

As discussed in Part 1, cleanliness is the key to defect free welds and this means that not only must the component be thoroughly degreased but so should the filler wires; weld preparation edges must be deburred and the highest purity shielding gas must be used. Ideally the gas should have a dew point of less than -50°C (39ppm H_2O) and to maintain this low level the gas supply system should be free of leaks. Regular and frequent maintenance of the system is therefore essential, checking the joints for leaks and for damaged hoses. Ideally the gas supply should be from a bulk gas tank, not cylinders, and delivered to the work stations via welded or brazed steel or copper tubing. Plastic hoses should be kept as short as possible as most plastics used are porous and will allow moisture to permeate through the hose wall. Neoprene and PVC are the worst, while Teflon is one of the least porous. It is worth remembering that moisture can collect in the hose over a period of time so a porosity problem, say after a weekend shut down, may be an indication that this is occurring.

TIG filler wires should be cleaned with a lint-free cloth and an efficient degreasing agent immediately before use. Following cleaning, the wire should not be handled with bare hands but rather whilst wearing clean, grease-free gloves. MIG wire presents more

of a problem but devices to clean the wire as it passes through the wire feeder are available. For the best results, wire that has been shaved to remove any embedded contaminants can be obtained.

A further potential source of contamination that is frequently overlooked is the use of air powered tools for wire brushing or dressing weld preparations and welds. Most compressed air contains moisture and oil so that, even when oil and moisture traps are fitted, it is possible to leave a thin film of moisture and/or oil on the surface to be welded. It is recommended that electrically powered tools are used at all times once the item has been degreased prior to welding.

Although regarded as a very minor problem, ductility dip cracking (where alloys experience a severe loss of ductility at a temperature below the solidification temperature) has been noted in some of the titanium alloys; the alpha-beta alloys containing niobium being the most susceptible with Ti-6Al-2Nb-1Ta-0.8Mo the most sensitive. The temperature range in which this loss of ductility occurs is between 750°C and 850°C .

The cracking is inter-granular and is thought to be partly the result of volume changes during the beta to alpha phase change coupled with the reduction in ductility.

A significant amount of welding of titanium alloys is carried out without the use of filler metals. When filler wire is used, generally a composition matching that of the parent metal is selected. There are, however, some exceptions. The welding of high strength but low ductility commercial purity titanium is generally performed with a low strength filler metal in order to achieve the desired weld quality. Similarly, unalloyed filler metal is sometimes used to weld alloys such as Ti-6Al-4V, thereby improving weld metal ductility by lowering the amount of beta phase that is formed. Extra low interstitial (ELI) filler metals are also available and may be used to improve weld metal ductility and toughness.

Most of the titanium alloys can be fusion welded successfully using the gas shielded welding processes and power beams; all can be welded using solid phase processes, friction and resistance welding. Welding parameters and weld preparations are similar to those that would be used to weld a carbon steel. From the welder's point of view, titanium is easier to weld than steel, having good fluidity and high surface tension, easing the task of depositing sound full penetration root beads.

TIG welding is probably the most commonly used process in both manual and mechanised applications. The current is DC-ve, generally with high purity argon as the shielding gas,



although helium or Ar/He mixtures may be used to improve penetration. Torch nozzles should be fitted with gas lenses to improve gas shielding and the ceramic shroud should be as large a diameter as possible. A 1.5mm diameter tungsten, for example, should be used with a 16mm diameter ceramic. Arc lengths need to be as short as possible to reduce the risk of contamination; 1 to 1.5 times the electrode diameter is regarded as a good rule of thumb. Arc initiation should be achieved by the use of HF current or Lift Arc to prevent tungsten contamination. The equipment must also be capable of continuing the shield gas flow after the arc is extinguished so that the weld can cool within the protective gas shield. It is also advisable to keep the tip of the filler wire within the gas shield until such times as it has cooled to a sufficiently low temperature.

A supplementary trailing gas shield will also need to be attached to the torch to provide protection to the cooling weld metal as the welder moves along the joint line. This makes manipulation of the welding torch more difficult. Most welders manufacture their own supplementary shields, shaped to fit the component closely; several shields would therefore be required to weld a range of pipe diameters. A backing gas is also necessary and back purging should be maintained for at least the first three or four passes in a weld. Backing gas purity should be better than 20ppm maximum oxygen.

MIG welding using argon or argon/helium mixtures may be used but this process will not provide the same high quality weld metal as the TIG process and it can be difficult to achieve the stringent quality levels required by aerospace applications. Dip transfer can lead to lack of fusion defects and spray transfer requires both leading and trailing supplementary gas shields, the leading gas shield to prevent oxidation of any spatter that may be re-melted into the weld pool. The

improvements in pulsed MIG power sources by the use of inverter technology and micro-processor control have obviated some of these problems and substantially narrowed the gap between MIG and TIG. MIG is, however, still difficult for the manual welder because of the difficulty of manipulating the MIG torch with a supplementary gas shroud. Because of these difficulties MIG welding is often mechanised or automated.

Plasma-TIG may be used for welding titanium, being capable of keyholing a weld up to 12.5mm thick. The same requirements for gas purity and weld pool protection required for TIG are also needed for plasma-TIG. Plasma-TIG is rarely used in a manual application and never in the keyhole mode.

Atmospheric contamination is best avoided by the use of a welding chamber or glove box that can be filled with argon. Purpose built glove boxes can be purchased but it is a simple matter to fabricate a chamber of an appropriate size using slotted angle, such as Dexion™ angle, to form the frame and covering this with a clear plastic or acetate sheet. The size of the component that can be welded within a glove box is necessarily restricted.

Electron beam, laser, friction, resistance spot and seam and flash welding are all used to weld titanium and its alloys. Electron beam welding, being carried out in a vacuum, needs no protective gas shield. Conventional friction welding may also be carried out without a protective shield although a gas shield should be used when friction stir welding. Similarly, no gas shield is required when resistance welding, although for the most critical applications a gas shield is recommended. Laser and flash welding both require gas shielding for the best results and least atmospheric contamination.

New Safety Course Launched

A new welding safety course is being launched at SAIW

This new five day course will include modules on Welding Theory, Practical Welding, OHS Act and Mines and Works Act Regulations, SANS 10238 and Oxyfuel Equipment and Regulations. The first course will be presented from 30 September to 4 October 2013.

There are limited seats available so anybody interested in doing the course should book early to avoid disappointment.

Bookings can be done through contacting Michelle Warmback at 011 298 2100/298 2125 or via e-mail at warmbackm@saiw.co.za



SAIW
Southern African Institute of Welding

NEW WELDING SAFETY COURSE LAUNCHED!

This new 5-day welding safety course presented by the Southern African Institute of Welding (SAIW) is aimed at all personnel carrying responsibility for safety in welding operations.

The ideal course for welding supervisors and safety officers!

The course includes regulatory requirements of the OHS Act, and the Mines and Works Act Regulations as well as the SANS 10238 standard for welding and thermal cutting processes, health and safety.

Course dates: 30 September 2013 – 4 October 2013
Limited seats available, book now to avoid disappointment

Contact Michelle Warmback on
011 298 2100/298 2125 or via e-mail at warmbackm@saiw.co.za

SPARKING SAFETY IN WELDING

Tommy Adams

Tommy Adams, a welding instructor at SAIW, sadly passed away on the 22nd of July at the age of 59 after complications from heart by-pass surgery. SAIW mourns the loss of Tommy who was a valued employee of SAIW, a great husband and a wonderful father. Our sincere condolences go out to Tommy's family and friends.

Tommy was born in Sterkspruit, Eastern Cape. At a young age the family moved to Worcester where Tommy eventually worked at the Post Office and then at a clothing factory. Tommy started his welding career in 1974 when he was employed as a welder by Andrew Mentis. His career progressed rapidly and he worked for companies such as ICAL and Sasol.

Tommy was a sought after welder, known for his experience, dedication, loyalty and a huge sense of humour.

Tommy is survived by his wife Miriam, whom he married on the 4th of September 1980, their two sons, two daughters and six grandchildren. His colleagues at SAIW will remember him for his giving nature and for being a person who was always willing to help.



Brian Sim visits SAIW

Brian Sim (19), from St Helena started training at SAIW on the 27th of May 2013. He completed the MMA (Manual Metal Arc) welding course before doing the Mig-Mag course. After SAIW noticed his potential he was moved to International Fillet Welding. On his birthday on the 13th of August, the SAIW management decided to have a braai for Brian where Gideon sang happy birthday.

The first thing Brian noticed on his first visit to a real city is the amount of rubbish in Johannesburg. On the island of St Helena, where he spent the first 18 years of his life, a fine of up to £800 is issued for littering.

Brian recently left the island for the first time in his life and works as a welder for a sub-contractor of the South African construction group, Basil Read, which is building the island's first airport. St Helena has very little crime; there are no squatter camps or beggars at the traffic lights. In fact

there are no traffic lights. St Helena's total population is 4000.

Brian stays in Boksburg and loves the East Rand Mall, where he had his first movie and take away experience. It was also the first time that he was able to go into a shop and try on clothes. In St Helena clothes are ordered from a catalogue. A cell phone and the Internet were also new to him.

Brian loves the South African girls, but he misses home. "I haven't seen the ocean since leaving Cape Town," he complains.



Dr Surekha Krishnan

Dr Surekha Krishnan joined SAIW as technical assistant to the executive director. Dr Krishnan was born in Salem, Tamilnadu in India and grew up in Poosaripatti. She went to primary school at Fatima Convent School, Omalur and New India Matriculation School in Ramamurthy Nagar. Her high school and higher secondary education was in Sri Vijay Vidyalyaya Matric Higher Secondary School in Dharmapuri. Her father was sub-inspector of Police in Tamil Nadu, India. Her total score in matric and higher secondary school exams fetched her first prize in Thiruvannamalai district among the children of the police department where her father worked at the time. She says that, "My father's joy knew no bounds on the days when my siblings and I received that award for our performance at school".

Her affinity towards Chemistry made her to pursue her bachelors degree in Metallurgical Engineering from Madras University. She was the University second rank holder in her Bachelors in Engineering. She did her Masters in Engineering (ME) specialised in Material Science at the National Institute of Technology, Tiruchirapalli (NITT), formerly called the Regional Engineering College. After completing her ME, Dr Krishnan worked as an ad hoc lecturer in NITT and as a lecturer at the Jayam College of Engineering and Technology in Dharmapuri.

Attracted by the teaching profession and to seek a permanent career, she pursued her PhD at the Indian Institute of Technology, Madras, India. Her PhD work was Friction Stir Welding of Aluminium Alloys. She was the recipient of the prestigious National Doctoral Fellowship (NDF) of All India Council of Technical Education (AICTE) India. After her PhD, she continued her research as a Research Associate at the Indian Institute of Technology, Bombay, India. This position led to an opportunity to pursue further research in Port Elizabeth, Nelson Mandela Metropolitan University (NMMU) which brought her to South Africa.

After a short time at Arcus Gibb as Welding Supervisor, Dr Krishnan joined the University of Johannesburg as a post-doctoral fellow, before applying for a lecturer position at SAIW. Instead of the lecturing position, SAIW offered her the position as technical assistant to the executive director. This was a wise move on the part of SAIW, considering that Dr Krishnan has six published articles in international peer reviewed journals and is a reviewer of the Surface and Coating Technology Journal. She has spoken at five international conferences and four national conferences in India. She has also written two book chapters, one on surface engineering and one focussing on nano-technology.



Her plans for the future are to keep learning and researching and to contribute to the field of welding. She would like to advance SAIW towards being recognised as a research institute. "Metallurgy is no longer just a male dominated field," says Dr Krishnan, "there are many opportunities opening up for women".

Dr Surekha Krishnan is married and has one little boy of three years old. She loves listening to Indian music, reading and cooking. "I am lucky that my husband also found a good position in South Africa," she says. "We are very happy in South Africa, but do miss home from time to time".

IMPORTANT ANNOUNCEMENT FROM THE SAQCC CP / IPE CERTIFICATION COMMITTEE - Requirements for Recertification of Competent Persons (CP) and Inspectors of Pressurised Equipment (IPE)

Certification of CPs and IPEs was first introduced at the beginning of 2005. Inspectors are certified for a period of nine years with renewal interventions required every three years. During the renewals at the three and six year intervals, inspectors have to submit evidence showing that they have continued to practice in their field of certification and also have to show evidence of continuing professional development (CPD). The certification of the first group of inspectors certified in 2005 is coming to the end of the nine-year certification period and the SAQCC CP / IPE Committee met recently to set the requirements for re-certification. There have been substantial changes to the legal framework and supporting standards in recent years, notably the introduction of the Pressure Equipment Regulations and the supporting standard SANS 347 'Categorization and conformity assessment criteria for all pressure equipment'. SAQCC CP / IPE has decided, in view of the major changes that have occurred, all recertifying inspectors will need to satisfy one of two options as part of the recertification process:

1. Attend a seminar/course/workshop on the PER and SANS 347 which is presented by a Department of Labour approved presenter. Please note that it is the presenters who have DoL approval, not their employer companies, nor organisations which may have organised events. Training events presented by other presenters will not be recognised.

OR

2. Successfully complete a SAQCC CP / IPE examination which covers the PER and SANS 347. The scope of the recertifying examination will be limited to knowledge of the PER and SANS 347. It will be a one hour, short answer type, closed book examination and will have a 70% pass mark. If an inspector fails two attempts at the examination it will become mandatory for the inspector to attend an approved training event.

It is anticipated that many inspectors will already comply with option one and further courses will be offered if there is sufficient demand.

Inspectors that have self-studied the regulations and standard or have learned by participation in in-company training events may opt for option two and, for these inspectors, examinations will be held in Johannesburg, Durban, Cape Town and Port Elizabeth when there is sufficient demand. The cost of the examination is R 482.00 including VAT (2013 price quoted).

More information on dates of courses and examinations will be provided in the next few weeks. Inspectors are encouraged to visit the SAIW website www.saiw.co.za for updates.

The recertification process will still require inspectors to provide records of experience and CPD as they have done for the periodic renewals.

- The process to be followed by CPs and IPEs wishing to apply for

re-certification includes:

- Completing the application form for certification renewal
- Providing a certified copy of the applicant's identity document
- Providing a current colour passport photograph
- Providing verified evidence of visual acuity on the standard SAQCC form (within the last six (6) months)
- Providing CPD records – 24 hours required
- Fulfilment of the minimum inspection experience requirements;
- CP-PV: - Ten (10) Pressure Vessels (needs to be verified by the relevant authority)
- CP-SG: - Six (6) Pressure Vessels (needs to be verified by the relevant authority)
- IPE: - Six (6) new pressure vessels or six (6) new fabricated steam generators or a combination of the two
- Providing verified evidence of attendance at an approved PER / SANS 347 training event or a pass mark in the recertification examination
- Payment of the recertification fee of R 1423.00 including VAT (2013 price quoted)

Inspectors are encouraged to apply for re-certification three months before their existing certification lapses. This means those inspectors required to be recertified by 1st January 2014 can apply from 1st October 2013. Early recertification will not affect the dates of the certification cycle, i.e. recertification will synchronise with the pre-existing three-year cycle. As is the case for renewal of certification, late applicants for recertification are given a three-month period of grace in which their applications are treated normally. Inspectors submitting applications more than three months late are required to attend an interview by an SAQCC CP / IPE panel which will decide on an appropriate process of recertification.

SAIW will process all applications for recertification, submitted in good time, within six weeks, if the applicant has provided full and correct information in the application form and supporting documents.

Inspectors are reminded that certification lapses on the expiry date on their certificate and any inspections carried out after that date are illegal.

Please note: All CP and IPE Inspectors are advised that, in view of the extent and importance of the changes to regulations and standards, the CP / IPE Committee considers that the same requirements should be applied to all inspectors when applying for certification renewal and it is advisable for inspectors to take advantage of training events at an early and suitably opportune time.

Herman Potgieter, SAQCC CP / IPE Secretariat

Qualification and Certification

CONGRATULATIONS TO THE PEOPLE BELOW WHO RECENTLY ACHIEVED QUALIFICATION AND CERTIFICATION

SAQCC-NDT CERTIFICATES

Liquid Penetrant Testing Level 1

J Steenkamp
EM Stuurman
BL Mofokeng
ZI Mahlangu
NK Ntuli
TV Zulu
SI Kubheka
BP Mjwara
CJ Smit
LCN Misibi

Liquid Penetrant Testing Level 2

WJJ Engelbrecht
GK Kumah

Liquid Penetrant Testing Level 3

None

Magnetic Particle Testing Level 1

EG Titus
B Kemp
EM Stuurman
TA Mahlangu
AE Potgieter
VL Mtsweni
KJ Olivier
L Masiso
F Sibanda
L Nguqu
J C Thompson
VS Myeni
TA Mahlangu
RA Magoba
SZ Dhlamini
HH Pearson
JA Smit
D Govender
ME Mlangeni

Magnetic Particle Testing Level 2

ZD Msibi
L Nel
T Moloi
MC Troskie
JA Smit

Ultrasonic Testing Level 1

R Pienaar
CL Daniels

Ultrasonic Testing Level 2

GP Kemp
SG Meerholz
M Whelan
S Dube

Ultrasonic Testing Level 3

None

Ultrasonic Testing Wall Thickness

J Hagi

Radiographic Testing Level 1

CL Daniels
TM Moncho
V Manala
Q Beselaar
GH Alberts

Radiographic Testing Level 2

JA Grobler
GM de Lange

Radiographic Testing Level 3

None

Radiographic Interpreters

D van Wyk
R Mostert
WH le Fleur

STUDENTS THAT PASSED THE WELDING INSPECTORS LEVEL ONE & TWO

Welding Inspectors Level 1

WO Lima
MN Abbas
RA Parker
IA du Plessis

CL Poisson
W Moses
H Lucas
RZ Bowie
M Harrinarain
MR Valensky
D Niewoudt
J Alberts
RG Swanepoel
N Dangale
M Winston
XR Sikhonde
DM Crowie
T Mabaso
P Tafataona
R Nefdt
MJ Cronje
MJ van Wyk
LAT Bedderson
PL Mkhawanazi
MP Seoplea
B Asrton
JS Benade
M Prinsloo
HC van Wyk
Q van Rooyen
DC Saayman
A Ramdhane
PA Paulsen
J Roskruege
K Sloan
PJ Blackburn
BD Barlow
MJ Laka
M Goliath
F Grotsuis
AJ Kuhn
BB Lloyd
HS Mahlaba
VN Maseko
EA Parker
LJ Botha
A Bvuma
E Can
XR Lukhele
ML de Vos
OB Radebe
NB Mlangeni
JC Botha
FJ Swanepoel
SS Mate
SO Nhlapo
SD Maluleke
V Ferreira
HM Mentz
TPL Matuludi
MM Mofokeng
L Kruger
TJ Haasbroek
SL Mahlangu
MM Mnisi
J Coetsee

JJ van Coller
MC Pretorius
HN Apende
JM Bahule
F Buys
CD Basson
SK Khulekani
LR Hlatswayo
JB Oelofse
SF Mapitlle
AR Thys

Welding Inspectors Level 2

SW Wilson
MC Hope
D Coleman
B Samuels
TH Nlapho
J Katuta
RM Anderson
R Tshitlho
PP Mnisi
MAJ Janneman
SA Mthethwa
ZW Foba
AJ Vallun
S Huxtable
AM Hodnett
BK Abrahams
J van Aswegen
Q Horwood
MI Maepa
CPP le Roux
JK Chikwakwa
WW Ebersohn
J Kisson
JI Hlatshwayo
J Heunes
J Goussard
ME Kwinchi
IE Globe
CD Basson
M Harrinarain
E Doyle
KJ van Leeve

ASME Codes of Manufacture

JG Reuben
NI Mokoena
N Buckle
MSB Makhanya
JP Logan
CA Greening
S Stoman
M Mahomed
A Jina
CT Potgieter
JC Oosthuizen

JP Trollip
CJ van der Merwe
JD Jiyana
SS Ratnasamy
E Schottz
MS Kassiem

Painting Inspectors

N Groberlaar
I Koen
J van der Merwe
S Walter
G de Klerk
N Buckle
D Cloete
H Erasmus
S van der Walt
J Erasmus
BP Nandi
JA Poxon
LL van Staden
M van Zyl
A Boshoff
T Naidoo
MM Sebatik
K Chilande
VN Ntungwe
ET Thys
DJ Coetzee
DI Freire
AP Duvenhage
J Ambrosius
JP de Lange
B Modisane
H du Toit
S van Jaarsveld
Y Thygesen
T Matsalana
JJ Myburgh
CTF Stanger
M Laurenson
TL Sibeko

Certified Students

Boilers

MT Fortune

Pressure Vessels

GC Manuel
CC Paul
LW Smith
TA Victor

IPE

R May
SJ Mokwena

New companies certified

Five new companies were recently ISO 3834 certified by SAIW Certification. FP Installations t/a FP Engineering, Machine Tool Promotions and Prodin were certified for ISO 3834 Part 2 and Boksán Projects and J & S Structure and Construction were certified for ISO 3834 Part 3.

As with all ISO certification, these companies will be able to prove to potential customers that they operate according to international standards and can be globally competitive. The Directors and Management of FP Engineering are proud of their ISO 3834 Welding Quality Management certification. This certification, along with ISO 9001 2008 achieved in 2011, reflects the growth in FP Engineering's capacity to deliver quality products in the manufacturing, engineering and projects sectors. "These standards that have been achieved in Quality Management and Welding Quality will assure our clients and overseas partners of our on-going commitment to supply and manufacture products to internationally recognised standards". FP Engineering was founded in 1974 and is an established general engineering business specialising in steel fabrication and the manufacturing of tanks, silos, pressure vessels, dryers, hopper, sugar and materials handling equipment. The company operates from a large, fully equipped, modern workshop and machine shop. The 4500 square meters of workshop features full overhead craneage.

and manufacturer to the furnace industry and remains respected as a specialist furnace component manufacturer while also providing services and manufacture equipment to a much wider range of market sectors and clients.

The Furnace Industry, with its stringent quality requirements and exacting standards, has provided Prodin™ with a platform from which it now provides these high standards of quality to all clients and customers. The Prodin™ name has become synonymous with an uncompromising commitment to quality.

Boksán Projects cc, previously known as Bridge Construction cc, was formed in 1993 and still operates from premises in Olifantsfontein where the factory has a production capacity of approximately 300 tons per month. To ensure high standards of workmanship the factory employs only suitably qualified boilermakers and coded welders. Boksán Projects cc is a member of the South African Institute of Welding as well as the Southern African Institute of Steel Construction. Boksán Projects cc has access to the services of other disciplines such as consulting engineers, independent inspection services and various companies in the civil engineering field on which it can call for full or partial services as required. The company has undertaken the fabrication, supply and erection of a variety of specialised structures



Machine Tool Promotions (MTP) offers a fully integrated range of products and services in the machine tool field. MTP sells an extensive range of new machine tools, as well as used and modernised machine tools. The rebuilding division can completely modernise machine tools, including the mechanical and geometric rebuilding of machines and the retrofitting of new Siemens, Fanuc or Heidenhain CNC systems. The machining division provides specialised machining services and the fabrication division can provide bed and column extensions for machine tools.

Prodin, medium to heavy engineering specialists with vast experience as a general fabricator for a wide variety of projects, delivers exceptional and consistently high quality projects - on time and within budget. The company's client portfolio and the reputation of its management team are wholly behind the company's successful track record. Since the early 1990's Prodin became a preferred supplier



throughout the Republic of South Africa as well as in Botswana, Lesotho, Mauritius and Swaziland.

J & S Structure and Construction, a general engineering firm has been in operation for 16 years and operates in Van der Bijl Park, with fixed contracts with ArcelorMittal. J & S mainly specialises in repairs, manufacturing, installation, maintenance and inspections on steel structures. The company also conducts welding tests (Non Destructive Testing) and wall thickness testing on structures. It also manufactures and installs pipelines according to ISO3834 standards.

Safety and quality is a mayor focus and all jobs meet the ISO 3834 Quality Standards. J & S Structure and Construction consists of a great team of dedicated qualified personnel with many years' experience in the field of structural steel work.



Cape Town

The Damian Kotecki seminar "Welding Metallurgy of Stainless Steels", held on the 16th of May 2013 at Encore, Platteklouf was well attended – speakers of this caliber are always appreciated. On the 29th of May SAIW lecturer, Nico Fourie, gave a presentation on "Reasons for Distortion and the Control of Distortion". This presentation was hosted by Hyflo in Paarden Eiland and was a great success. We were hosted by 180 Engineering Solutions on the 20th of June for a presentation by Franco du Plessis on "Test Requirements for Weld Procedure Qualification Records", which was also well supported. We thank all of our hosts and speakers for so graciously accommodating us.

Should anyone have any suggestions for evening meetings, for further information on forthcoming events or to be added to the Cape Town SAIW mailing list, please contact Liz Berry (berryl@saiw.co.za).

Our stand at the recent Cape Industrial Showcase, which ran from the 3rd to 5th of July at the CTICC had visitors from various industries, and it was great to see all of the valued members that stopped by.



The SANS 347/PER workshop scheduled for the 22nd of August is obviously a winner – we were fully booked within days of sending out the notice! Should you have missed out, please contact the Cape Town office, and should we have sufficient interest, we will try to schedule a repeat for the near future.

Anne Meyer appointed SAIW KZN Representative

Although Anne Meyer calls herself an 'ordinary language teacher', there is nothing ordinary about her. She studied English and Biblical Studies at North West University and taught English in Lydenburg. Anne then studied tourism at the Nelspruit Technical College before moving to Durban with her new husband in 1995. She joined the Durban North College where she taught English and started the Afrikaans First Additional Section. In 2005 Anne moved to George Campbell School of Technology where she taught Afrikaans while also handling the Marketing Department, liaising with industry. Anne believes that it is through divine intervention that she started a welding school at George Campbell. She first made contact with SAIW when the school became a corporate member of SAIW.



Jim Guild, recognising Anne's potential and interest in welding approached her to fulfill the role as the SAIW Kwa-Zulu Natal (KZN) branch representative. With the support of George Campbell THS she agreed to take the position on a part-time basis. She will work closely with the branch committee and will be coordinating monthly meetings, handling

customer relations and promoting SAIW in KZN. Having a passion for teaching, Anne's goal is to educate people about the importance of getting a coded welding qualification and eventually start a fully accredited welding training facility in KZN, producing qualified coded Welders.

Anne's secret to success is her strong belief that she has a purpose and a destiny to fulfill in the given job. While at George Campbell School of Technology, Anne realised the importance of the role learners can play in Industry. Through welding, they can be placed in positions in Industry already knowing more than the average 'learner on the street'. "I also realised what an important role Industry plays in getting involved in education Institutions and that the way forward in bridging our skills shortage gap is a close relationship between these Institutions," says Anne.

Anne's contact details are:
meyera@saiw.co.za
Cel no. 0837875624

SEND US YOUR NEWS

Fusion is for the members of SAIW. It is your publication. Therefore it has been decided to start a members' page. This will include corporate or individual members. So if you got married, had a baby, got a promotion or have anything to tell industry, please let us know. All news is valid and can include personal, company or industry news. It can be happy or sad, academic or silly, whatever you want to share. Please e-mail submissions to frances@trinitas.co.za. We will publish it in Fusion and if newsworthy also disseminate to other media.

This might be your big breakthrough in becoming famous.

JOHANNESBURG (HEAD OFFICE)

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