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QUARTER 2 | 2024

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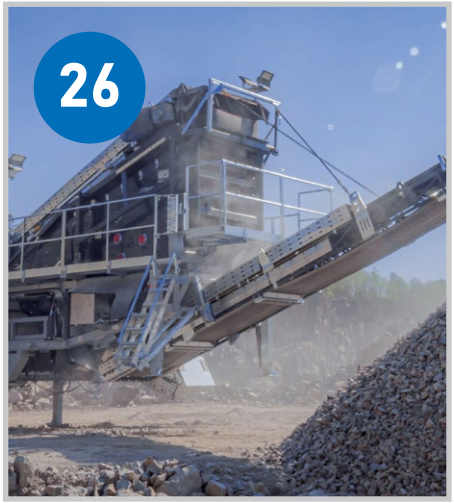

COMMENT

NAVIGATING TOUGH TIMES

The recent Institute of Quarrying Southern Africa conference in Durban brought together an industry that is narrowly aligned to how the construction industry (building and civils) is faring. Just as the highly resilient construction industry has withstood difficult times that have lasted almost a decade, the quarrying industry has managed to weather the storm with an increased focus on safety, sustainability and technology for more effective output.

The quarrying industry is responsible for the extraction of stone, clay, sand and aggregates, all of which are needed for the country's construction activities, an industry that has proven globally that it can help a country recover and flourish after a period of a depressed economy.

The challenges faced by the quarrying industry include compliance, environmental responsibility, sustainability, community engagement and market volatility. The first four of these challenges is perhaps more predictable, but market volatility not. Despite the unpredictable nature of markets, the quarrying industry has managed to soften the blow of this by embracing new technologies with which it produces products as effectively as possible.

For the quarrying industry to flourish, it needs a flourishing construction industry though.

In the current context, there has been an increased investment in renewable energy projects and some collaboration with other industry players, construction firms and government agencies to bring limited large-scale projects and infrastructure developments to fruition.

This is seasonal though and may be directly aligned to the recent national elections. A sustained increase in demand is what is needed to drive growth in quarrying. For this to happen there will have to be a bigger contribution from the private sector in infrastructure, energy and building because infrastructure spending is limited at the moment.

In an increasingly competitive quarrying industry, it has become imperative to employ digital technologies, accurate surveying methods and monitoring, data analytics and automation. There have been various advances in terms of equipment, crushing and screening and material handling to benefit the industry in a time of almost non-existent margins.

In this issue we focus on advances in screening. I interviewed Charl Marais, a Sales Manager at Pilot Crushtec who says that if a screen is inefficient, even with a highly effective crushing process, production on your quarry will not be as effective as it can be.

Efffective distribution is vital for any quarrying establishment to survive. I spoke to Glenn Johnson, AfriSam's Executive for Construction Materials: Operations who says that AfriSam is often viewed as only a cement, aggregate and readymix producer and that little thought is given to the fact that distribution plays a vital part in its operations.

I also spoke to Anton Lourens, CEO of Booyco Electronics about the important role successful change management plays in ensuring the success of PDS technology deployment, especially since there has been an increase in the uptake of PDS in line with the promulgation of the mine health and safety regulation for trackless mobile machinery.

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MOVE QUARRYING DOWN TO BE NEXT TO SA

The 53rd AGM conference of the Institute of Quarrying was held in Durban in April. Under the theme 'Transforming the future', this conference was held with ASPASA and addressed pertinent issues affecting the small surface mining industry, while ASPASA recognised excellence in the Health & Safety performances of 2023 with its annual awards. Modern Quarrying attended and exhibited at the conference as, in addition to the formal conference, a static exhibition was hosted during the conference to give delegates the opportunity to view the latest technology in the industry.

Hugo Pienaar, the Chief Economist for the Mineral's Council maintained that South Africa has a stop-start economy.

Jaco du Plooy's presentation focused on a lightning strike on a charged up bench at AfriSam's Jukskei Quarry.

On the first day Pieter Redelinghuys, Futurist & Director at Institute for Technology Strategy and Innovation, contextualised the future with a presentation about how to harness the opportunities that will be presented by the current world orders. While the world will experience unprecedented population growth in some areas, population growth will decline in others. He is also of the opinion that new 'power blocks' will arise which will lead to what he calls decoupling and decolonisation. The new power blocks and the emergence of 'homeland' economies will create opportunities for an industry such as quarrying and various countries will be reliant on a new supply chain.

Willie Scholtz, Chief Surveyor at Eugene Pretorius and Associates presented a paper detailing the uses and limitations of drone technology in the industry from a mining perspective. In this presentation he highlighted the advantages and uses of drones which range from surveys, security testing, building inspection to strata analysis. He says that it is crucial to find a balance between the quality and

The new power blocks and the emergence of 'homeland' economies will create opportunities for an industry such as quarrying and various countries will be reliant on a new supply chain.

Simon Tose from AECI discussed new explosive legislation.

Jacomien du Bruyn (left) and Sandra Wakeford from Raumix Aggregates discussed the important role of the IQSA in meeting ESG in the mining of aggregates.

Sampie Kruth, AfriSam's National Engineering Manager, gave a presentation of the factors that led AfriSam to choose its provider of PDS at their Verulam quarry.

Corrie Rautenbach, the MD of EXMS discussed "Explosives legislation's practical impact on small surface mines in South Africa".

> **It is about the commitment of top management, stakeholder engagement, the setting of clear goals and the integration of this process into the business plan.**

quantity of the data collected from drones and that it is vital to get the right operator for a drone as operating a drone and processing data are the biggest limitations of drones.

Safety and how quarrying operations regard sustainability was the theme of many of the presentations at the conference. In their presentation "Transforming our future: the ESG Perspective – who cares wins", Jacomien du Bruyn and Sandra Wakeford from Raumix Aggregates discussed the important role of the IQSA in meeting ESG in the mining of aggregates. "It is about the commitment of top management, stakeholder engagement, the setting of clear goals and the integration of this process into the business plan," they maintained. For them, ESG is about changing how the industry thinks about the way things have always been done – as such it is a business disruptor.

Various other presentations at the conference also centred around safety. This ranged from a young member paper on the monitoring of drivers and vehicles by PPC's Thabiso Nyadeni to the management of waste by Afrimat's Ashleigh Cokart.

AfriSam's Sampie Kruth, AfriSam's National Engineering Manager, gave a presentation of the factors that led AfriSam to choose its provider of PDS at their Verulam quarry. In his presentation, "The AfriSam traffic management and PDS journey", he highlighted the legal obligation that quarries have to stop employees from being injured by diesel powered trackless mobile machines. He highlighted the process AfriSam went through at Verulam to arrive at the best way to address this new legislation.

One of the most interesting presentations was how a lightning strike on a charged up bench at AfriSam's Jukskei Quarry was handled safely and as efficiently as possible. Jaco du Plooy from AfriSam had the audience captivated as he took them through the situation before and after the charged up bench was detonated at the same time by a lightning strike.

In his presentation, "Explosives legislation's practical impact on small surface mines in South Africa", Corrie Rautenbach, the MD of EXMS said that the use of explosives is governed by the Department of Transport, the Department of Labour, the DMRE and by the South African Police and that legislation only focuses on employees, the public,

Willie Scholtz, Chief Surveyor at Eugene Pretorius and Associates presented a paper detailing the uses and limitations of drone technology in the industry.

Ferdi Pieterse discussed the intricate and latest regulatory developments of mine close planning and financial provision.

environment and property.

Hugo Pienaar, the Chief Economist for the Mineral's Council maintained that South Africa has a stop-start economy and that it is influenced by geo-political factors. His presentation delved into the status quo and made predictions for the construction industry and how something such as the elections have an effect on activity. Although it is not an overly positive outlook, mining (which includes quarrying) accounts for 6,3% of South Africa's GDP.

Simon Tose from AECI discussed new explosive legislation while Ferdi Pieterse discussed the intricate and latest regulatory developments of mine close planning and financial provision. ●

ACKNOWLEDGING HEALTH & SAFETY PERFORMANCES

At the recent Institute of Quarrying Southern Africa annual conference, various industry awards were made. The health and safety industry awards that are administered by ASPASA are a highlight. Collin Ramukhubathi, ASPASA'S chairman handed out the awards.

Anton Marnewick – Afrimat Qwa Qwa Top Performer ISHE Audits and Collin Ramukhubathi.

Ashleigh Cokart - Afrimat and Collin Ramukhubathi.

CJ Fourie – Health & Safety Officer - Raumix Aggregates with Collin Ramukhubathi.

Eduan Mienie – Health & Safety Officer- Drift Supersand and Leazonia with Collin Ramukhubathi.

Marius van Deventer thanked ASPASA and members of ASPASA for the opportunity to acknowledge the best Health & Safety performances of 2023. "This would not have been possible without their dedication and commitment. Thanks to the ASPASA and the IQSA mancom teams for hosting this conference and also for giving me the opportunity to honour and acknowledge the performances on the ISHE Audits of 2023," said Van Deventer.

"The Health & Safety Standards and performances of all ASPASA members are still one of the best performances, if not the best, of any commodity mined in South Africa," he stated

"It might be a bit unfair to only acknowledge the performances of this handful of recipients as safety relates back to teamwork. These performances would not have been possible if it weren't for the teamwork and commitment from everybody," he said.

A total of 81 audits were done during 2023 which achieved an average score of 89,84%. The highest of these was 97,59%. The average score is higher than the 2022 average score (88,91%) and can be seen as a solid overall improvement. Seventy percent of the ASPASA members that were audited achieved scores of above 90%.

Special recognition is given to those quarries that achieve Showplace Status on the current audit annually.

The first category of recipients were for **Health & Safety Service Providerm Excellence**.

Vicky Landman, a consultant from Sheqomspec specialises as an ISO expert.

Almost all the operations where she is involved, achieved Showplace Status during last year.

Avinash Mahabeer – H&S Representative BluRock Quarry and Collin Ramukhubathi.

Bronwyn Moore – Midmar Quarry Consistency in achieving a showplace for five consecutive years with Collin Ramukhubathi.

Eric Alderson – BluRock Quarry – Top Independent Performer ISHE Audits with Collin Ramukhubathi.

Eugene Riley – Health & Safety Officer Afrisam and Collin Ramukhubathi.

Another award in the **Health & Safety Service Provider Excellence** category was awarded to Ronelle Affinand.

There were two awards for **Health & Safety Representatives**.

Appointed H&S Representatives at member quarries are democratically elected to perform their duties as representatives and this is added to their normal duties at the operation. Often the success of the safety performance depends on these people as they are the eyes and ears of management, and the mentors to colleagues.

Two H&S Representatives were acknowledged for their outstanding work as their quarries achieved the highest scores during the 2023 ISHE Audits:

Donald Katiso Tsotetsi – from Afrimat Qwa Qwa and Avinash Mahabeer from BluRock Quarry.

In the category for **Health &**

SNAPSHOT

- **Top Performer: Afrimat Qwa Qwa**
- **Top Independent Performer: BluRock Quarry**
- **Top Corporate Performer: AfriSam**
- **Consistency in achieving Showplace for five years or more: Midmar Quarry**
- **Most improved operation: Raumix Aggregates Queenstown Quarry**
- **Health & Safety Awards for outstanding commitment: Anton Marnewick - Afrimat**
- **Health & Safety Officer: Eugene Riley – Afrisam, Marina Gricius – Afrimat, Eduan Mienie – Drift Super Sand & Laezonia, CJ Fourie – Raumix Aggregates Southern Region**
- **Health & Safety Representative: Ronald Katiso Tsotetsi – Afrimat Qwa Qwa and Avinash Mahabeer – BluRock Quarry**
- **Health & Safety Service Provider Excellence: Ronelle Affinand – NOSHCON and**
- **Vicky Landman – Sheqomspec**

Herkie Sandenbergh - Raumix and Collin Ramukhubathi.

Jacomien du Bruyn and Herkie Sandenbergh - Raumix with Collin Ramukhubathi.

Ronelle Affin – Noshcon Health & Safety Service Provider Excellence and Collin Ramukhubathi.

Schutte Fouche - Drift Laezonia and Collin Ramukhubathi.

Trevor McAdam Drift Supersand and Collin Ramukhubathi.

Vernon Brown – Afrisam Top Corporate Performer with Collin Ramukhubathi.

Safety Officers the recipients excelled in their services at their respective operations and ensured that these operations achieve some of the highest scores on the ISHE Audits for 2023.

Achieving high scores on the ISHE Audits can only be done by total commitment from the entire team. These employees have gone the extra mile to implement a sustainable system to ensure high standards in Health & Safety of all employees.

- Eugene Riley – Afrisam
- Eduan Mienie – Drift Super Sand & Laezonia
- CJ Fourie – Raumix Aggregates Southern Region
- Marina Gricius – Afrimat

The criteria used for the **Most Improved Operation** is not only the improvement in the actual score achieved during the audit, but also the improvements made in the implementation of the documented Health & Safety system, the development of the quarry itself, and the improvements made in the crushing and screening plants.

In 2023, Raumix Aggregates Queenstown Quarry in the Eastern Cape was awarded as the most improved operation.

To achieve Showplace Status on the ISHE Audit is already challenging and to repeat this for

Marina Grisius – Health & Safety Officer for Afrimat and Collin Ramukhubathi.

Marius Kruger – Afrimat Hluhluwe with Collin Ramukhubathi.

five years consecutively is even more challenging. Only one quarry has achieved this - Midmar Quarry.

The **Top Corporate Performer Award** for 2023 was awarded to AfriSam for its average score of 93,35% at their 10 quarries that were audited. They also achieved a LTIFR of Zero.

The **Top Independent Performer Award** for 2023 was a well contested category with excellent achievements, high standards and total commitment throughout the industry. BluRock Quarry was awarded this prize with an ISHE Audit score of 97,27%.

The **Top Performer for 2023** was awarded to the operation that achieved the highest score - 97,59% for 2023. Afrimat's Qwa Qwa quarry was awarded the Top Performer.

Anton Marnewick, the Mine Manager at Qwa Qwa, was presented with the award for outstanding commitment to Health and Safety at all his operations. ●

IN PHOTOS: THE LATEST TECHNOLOGY IN THE QUARRYING INDUSTRY

At the recent IQSA conference in Durban (11 to 12 April), a static exhibition was staged for the duration of the conference which gave delegates the opportunity to view the latest technology in the quarrying industry. Modern Quarrying also exhibited.


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PRECISION BLASTING
bme
DISCOVER
the full value of BME
AXXIS SILVER
AXXIS TITANIUM


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Jeremy Hunter-Smith, Chairman of the IQSA handing over the award for Best Paper to Kirath Isiripershad from AfriSam.

DEVELOPING THE NEXT **GENERATION QUARRYING** PROFESSIONAL

The Institute of Quarrying Southern Africa (IQSA) is actively seeking to build and grow the quarrying industry's next generation professionals and leaders. Every year at least two young professionals are invited to present a paper at the annual IQSA conference. A winner is chosen and given the opportunity to join other young professionals internationally to gain insight into how other quarrying industries function and use new technology.

Chairman of the IQSA, Jeremy Hunter-Smith says this initiative enables a younger member to build a profile locally and to gain insights internationally. "Presenting at the conference gives younger members the confidence to present and share their experiences with the industry," says Hunter-Smith. "The best paper is selected by delegates, and the winner announced at the following year's conference," he says.

"IQSA has been working on a young member programme with

the Institute of Quarrying Australia since 2017. In 2018 our first Young Member, Lloyd Maringa, from AfriSam, was selected as having presented the best paper. The IQSA raised funds for him to join the IQA Young Members tour to New Zealand. Unfortunately, the Covid pandemic forced our programme to take a back seat as we navigated the challenges over the next three years. We are now back on our feet and worked towards kick-starting the programme. We managed to secure sponsors, (AfriSam, Caldas, Astec, Blurock Quarries and IQSA) which enabled us to register the winner of the Best Young Professional 2023 award - Kirath Isiripershad from AfriSam - to attend the IQA tour to Hillhead in the UK in June. Our aim is to create an annual event for the winning young member, something which we are only able to do through the generous sponsorships from the industry," he says.

Modern Quarrying asked this year's winner, Kirath Isiripershad how he plans to use the insights he will gain in his personal development, and to the greater benefit of the industry.

What was your winning paper about?

The paper I presented at IQSA 2023 spoke about the improvements that were made to a Telsmith vibrating grizzly feeder installed at AfriSam's Coedmore quarry to improve the throughput of the plant. This involved replacing the existing problematic drive system of the grizzly feeder from a dual eccentric shaft mechanism to a dual vibration motor type drive system. The most critical part of this project was the design of the motor beam as it was responsible for ensuring the vibration motors were positioned correctly to achieve the desired material flow rate while withstanding the extreme unbalanced resultant forces exerted by those motors. Using this drive system allowed for increased plant efficiency by increasing the machine availability of the plant.

What attracted you to the industry?

I was always attracted to technical problems and how they can be solved. I wanted to be a mechanical engineer from a young age and managed to get the opportunity to pursue my studies in this field at UKZN. I graduated as a mechanical engineer in 2019 and managed to get into the field immediately. After landing the position of Engineer in Training at AfriSam's Coedmore quarry in March 2020, I fell in love with the industry after learning about the high number of challenges and complexities a quarry is faced with and just how multidisciplinary this industry is. I grew to enjoy and pursue a career in this industry as it challenged my skills and allowed me to work on different types of projects. It also allowed me to improve my skills within other disciplines.

What are the obstacles for a young professional starting out in their careers in the quarrying industry?

In the first four years in this industry, I have noticed that there are a large number older generation people who have found a footing in this industry. They remained in this industry as they proved themselves and developed the required expertise over the years. Getting into this industry demands a lot of hard work in a harsh and unforgiving work environment, which many young professionals are not willing to take on. Therefore, I would say the biggest obstacle is their ability to work hard and apply their skills while withstanding the high pressure and harsh working environments that come with this industry.

What has been the highlight of your professional career?

There are two major highlights. The first being that I was made a permanent employee and promoted to being the National Maintenance Planner for AfriSam's Construction Materials (CM) business as of January 2024. I am now solely responsible for the management of the SAP PM system for all equipment within AfriSam CM plants in South Africa.

My most recent achievement was that I received the award for the Best Young Professional 2023 from the Institute of Quarrying Southern Africa. As part of the award, I will be visiting some quarries and the Hillhead Expo in the UK together with the other young members from the Institute of Quarrying Australia in June 2024.

How will you use the insights you gain from your overseas trip in your career and for the good of the industry?

The trip to the UK will allow me to visit various quarries in the UK that make use of first world technology to solve various challenges faced by the industry. Seeing this latest and innovative technology in action will allow me to establish the advantages that come with it and how it can be used here to improve the processes involved in aggregate production.

Visiting the Hillhead Expo in the UK will allow me to become familiar with how the latest technology in our industry works and will allow me to take our industry to the next level locally. I would also like to explore what exactly artificial intelligence and autonomous machinery and control will bring to this industry in terms of improving operational performance, engineering methods, mine safety and quality standards.

Due to the current state of the South African infrastructure, I would also like to explore what alternatives exist to power plant equipment while simultaneously reducing operational costs that are associated with using diesel. Furthermore, I would also like to see how electric motors are being used in earth-moving equipment and the dynamics that surround the usage of these vehicles.

I do believe there is significant room to improve quarrying by implementing the new technologies that exist.

Latest generation high capacity polyurethane casting machine.

Flaming to remove any moisture after polyurethane casting into moulds.

FLSMIDTH DELMAS: A MANUFACTURING HUB FOR SCREENING

FLSmidth is a technology and service supplier to the global mining and cement industries and helps customers improve performance, lower operating cost and reduce environmental impact. Modern Quarrying visited FLSmidth's manufacturing facility in Delmas and spoke to Warren Walker, the General Manager of Operations about this facility's engineering capability to support local customers, but also customers globally with certain lines of products.

With the facility's phase 2 expansion opening in 2019, the existing set-up increased to 10 500 m² under roof and under crane. This facility offers a full screening solutions package that is locally manufactured, predominantly for the African market, but also the Middle Eastern and South Asian markets. If required, customised screens produced at this facility are supplied into other markets (such as Europe) when additional capacity is required.

"The facility, in the end, aims to increase the quality, reliability, efficiency and cost effectiveness of customers. It has a diverse product portfolio and manufactures a wide range of consumables, spare parts, as well as capital screens that often involves customisation," explains Walker. It is one of FLSmidth's designated manufacturing facilities around the globe that supplies key areas with operating equipment in the screening segment and adheres to strict internal and external standards which include ISO 9001, OHSAS 18001 and various welding standards.

The Delmas facility has a number of pillars and offers these under one roof. "It manufactures consumables, such as screen panels, flotation rotors, baskets etc. for its spare parts market. It also upgrades, retrofits and rebuilds," says Walker. In addition, the facility also manufactures new capital equipment such as flotation equipment, vibrating screens, a range of different single and double deck, heavy duty, and medium duty vibrating feeders.

A vibrating screen.

Warren Walker with a sizing panel for iron ore screening after quality control inspection.

The Delmas facility manufactures screens used for primary, secondary and tertiary screening, while it also manufactures stainless steel wedge wire screens for dewatering and desliming applications. "It includes the complete range of this from large apertures, stainless steel panels for primary screening to complete polyurethane panels, a range of different aperture sizes, and fine apertures for dewatering," says Walker.

SNAPSHOT

This facility offers a full screening solutions package that is locally manufactured, predominantly for the African market, but also the Middle Eastern and South Asian markets.

It is one of FLSmidth's designated manufacturing facilities around the globe that supplies key areas with operating equipment in the screening segment and adheres to strict internal and external standards which include ISO 9001, OHSAS 18001 and various welding standards.

FLSmidth used the more expensive open cast method for screens as this typically achieves a 30% higher service life than an injection moulded panel of the same size.

FLS-86 is truly a game-changer in the screening media space, with performance already proven in high-wear applications across many ore types in terms of abrasive resistance and service life.

A central location to service customers

"When the facility was expanded, upgraded machines for casting of polyurethane media were relocated to the facility and it also upgraded to a large new generation manufacturing machine with the capacity to pour 42 kilogrammes and which enables the pre-programming of polyurethane hardness. Machines have been placed on tracks so they can be moved closer to the heating tables for production of the screen panels. We completely reinvented the older generation machines so we can support markets with screen panels," says Walker.

As a result of the bottlenecks caused by especially the COVID-19 pandemic which led to long global freight lead times, users are not holding as much inventory as in the past. "Being close to our core customer base, the facility is able to offer locally produced premium quality products and made-to-order

Inventory kept in main warehouse of Delmas manufacturing facility.

products to support customers with products. We keep sufficient raw material inventory so we are not affected by global shipping delays which in turn allows customers to reduce their inventories," says Walker.

The facility produces panels for screens that were designed in South Africa, predominantly for iron ore screening. "We also produce a series of panels used by the FLSmidth group – the LUDODECK® system with an integrated clipping system. "These are supplied to customers in Mozambique, Zambia, the Middle East and India while capital screens are typically exported to Europe and Central Asia," says Walker.

Manufacturing in Africa

Walker says that operating a manufacturing facility in South Africa comes with challenges, but that the advantages of producing locally outweigh these challenges. "South Africa is a low-cost country in terms of manufacturing. To alleviate the impact of loadshedding we have back-up generators. The facility is currently installing the first phase of a 300kW solar system which will reduce electricity costs and minimise its reliance on Eskom," says Walker.

"The Delmas-area has a high unemployment rate. Some 70% of the facility's blue collar production employees are from the local area. In terms of white collar engineers, the facility employs a diverse demographic which includes female engineers," says Walker.

Skills development is a key part of maintaining high quality. "We have a good pool of people to train specifically on the production of screen media. Welding is one of the foundational pillars of all the fabrication work that goes on within the manufacturing work and we have 190 qualified welding procedures, covering different types of materials and standards for which the training is done locally.".

The facility makes use of a robotic welder for the welding of panel frames. This gives repeatable quality and gives a 400% productivity improvement had it been done manually.

Demoulding of a blank discharge panel.

The importance of research and development

Most screens are equipped with polyurethane panels. Walker explains that because screen panels are commoditised products, it is price sensitive. "We use the more expensive open cast methods as this typically achieves a 30% higher service life than an injection moulded panel of the same size. To remain competitive, research and development into different polymers and production techniques is critical."

The facility is currently purchasing a new latest generation casting machine for the production of panels. It will use propriety material that will significantly increase the wear resistance and service line of the screens. "This is an example of local and international research and development. Trials for this material enables us to achieve two to three times the life of the current TDI polyurethane material of the screening panels in the abrasive mining environment," he says.

Robotic welding of screen panel inserts for optimised productivity.

Chris Currie, Business Development Manager at FLSmidth says that this material – FLS-86 – is truly a "game-changer in the screening media space, with performance already proven in high-wear applications across many ore types in terms of abrasive resistance and service life".

Research and development also looks at implementing new technology in the manufacturing process. "The latest generation machine being installed is auto calibrating which enables operators to get quality control records directly from, while it is fully PLC controlled, programmable and enables one to ascertain the ratios between different components," Walker explains.

The facility is investigating the use of more robotic techniques (where possible) to increase its throughput and minimise production costs.

There is ongoing research to maximise development of the open area on the panels. Various trials are done globally for different materials, looking at the aperture configuration to optimise the screening efficiency of the product.

"Quality control of manufactured machines and components are managed at the Delmas facility by our quality control department," says Walker. "Specialised welding skill sets are in place and stringent welding procedures are applied as vibrating screens are subjected to gigacycle fatigue during operation," Walker concludes. ●

THE IMPORTANCE OF SCREENING IN THE EFFECTIVENESS OF YOUR PRODUCTION

Whether it is primary, secondary or tertiary crushing – if a screen is inefficient, even with a highly effective crushing process, production on your quarry will not be as effective as it can be. Modern Quarrying spoke to Charl Marais - Sales Manager at Pilot Crushtec International about screens as a vital aspect in the crushing process and some of the innovative screens Pilot Crushtec offers the market.

Pilot Crushtec International supplies a full range of world-class, heavy-duty, fit-for-purpose, mobile, semi-mobile and static inclined vibrating screens. "The range of OEM and locally manufactured screens are perfect for screening, scalping, sizing and de-watering in the aggregate and sand industries.

"Screens are the hearts of plants as they are a 'moneymaker'," says Marais. "It is vital to investigate the efficacy of your plant's screen by testing it to see if it has any carry over. Once this has been ascertained, customers can decide if a screen upgrade is necessary. In terms of capital outlay, upgrading a screen is a smaller expenditure with which production of sellable product can be improved."

Consider screens first to increase production

Over the years, there has been an increased focus on the role screens play in the efficiency of the production process. "Plants are designed for a certain capacity. When capacity needs be increased to satisfy demand, a quarry or plant owner is inclined to consider bigger crushers or jaw crushers. Often the screening section of the plant is neglected. In my mind, it's more important to look at the screen in the efficiency of the operation. Even if production is increased by a bigger crusher, screens can only screen out the material that its ability allows. In real terms, if you have carryover of 10% that stays in the circuit, the 10% that has not been screened means that the user loses 10% of sales capacity," says Marais. "In this time of margin squeeze it is important that a screen is a smaller capital outlay that a bigger crusher," explains Marais.

Screen that are too big

For Marais certain factors are vital in the selection of a screen. "The grading and feed rates to a specific screen is important," he says. "Some customers sometimes use an oversized screen. If your screen is

The Metso Lokotrack ST2.3 and ST2.8 mobile scalping screens offer versatility to contractors.

It is the fact that the two boxes can be run independently on their own drives that truly makes the Pilot Modular DD7215 semi-mobile screen come into its own

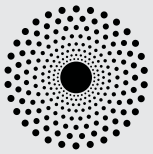
too big, it can lead to inefficiency on the screen. It is important to select the correct size screen for the application. If it is too big, material will not make contact with the screening mesh and will miss the opportunity to be separated from the bigger particles because it's just bouncing all over the screen," he says.

Scalping screens

In 2022 Pilot Crushtec launched a range of scalping screens, which Marais says have proven to be popular. "The reason why these scalping screens are popular is because it allows customers to produce sellable product from an initial screening process," says Marais.

The MetsoLokotrack ST2.3 and ST2.8 mobile scalping screens offers versatility to contractors to adapt the machine to achieve desired results. It is a multi-use scalping screen that can be

SNAPSHOT



If your screen is too big, it can lead to inefficiency on the screen. If it is too big, material will not make contact with the screening mesh and will miss the opportunity to be separated from the bigger particles because it's just bouncing all over the screen.

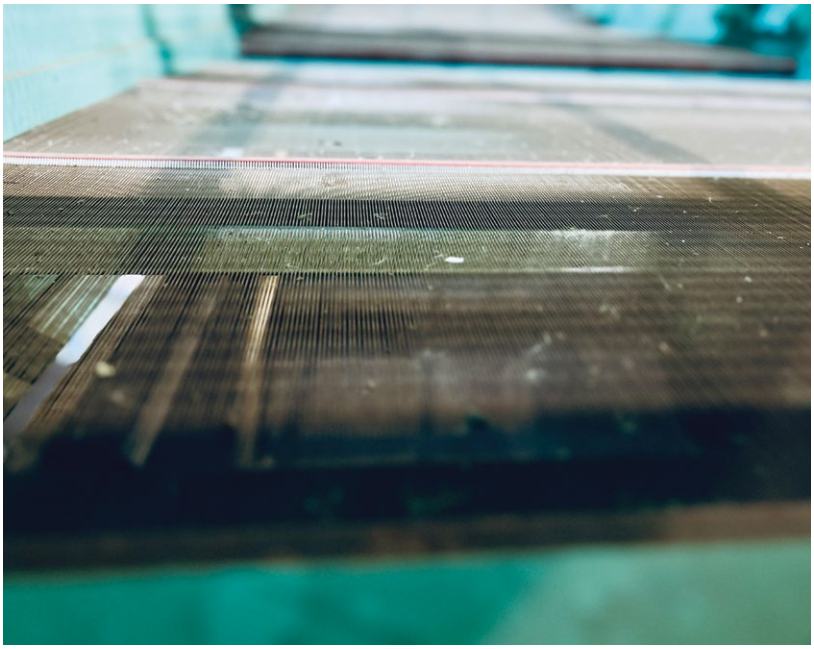
It is vital to investigate the efficacy of your plant's screen by testing it to see if it has any carry over. Once this has been ascertained, customers can decide if a screen upgrade is necessary.

The Metso Lokotrack ST2.3 and ST2.8 mobile scalping screens offers versatility to contractors to adapt the machine to achieve desired results.

Pilot Crushtec uses something called 'piano wire': this involves long strands across the screen box in line with the flow of the material which allows more open area to be created on the screen, making the screen more efficient.

The Pilot Modular DD2412 screen, 2,4 long and 1,2 m wide, is the smallest final screen Pilot Crushtec offers.

The Pilot Modular DD3615 Screen's double deck screen is 3,6 m x 1,5 m.



Using 'piano wire' allows you to create more open area on the screen, making the screen more efficient.

deployed in several applications and process various feed materials.

Final screens

The final screen cannot be fed big lump sizes of up to -500 mm rock, and is usually used for construction material and produces finer material of 19 mm, 13.2 mm or 9.5 mm. A unique range from Pilot Crushtec is its three double deck models: the Pilot Modular DD2412 Screen has a screen that is 2,4 long and 1,2 m wide which Marais says is the smallest final screen Pilot Crushtec offers.

The Pilot Modular DD3615 Screen's double deck screen is 3,6 m x 1,5 m. "This can be doubled to create the Pilot Modular DD7215 semi-mobile screen. "Its dual boxes are on one speed frame," explains Marais. "What's unique about the screen boxes is that the top and bottom boxes use different directional media which allows us to use various screen meshes – something that is unique in the market. We use something called 'piano wire': this involves long strands across the screen box in line with the flow of the material. This allows you to create more open area on the screen, making the screen more efficient," says Marais.

It is the fact that the two boxes can be run independently on their own drives that truly makes the Pilot Modular DD7215 come into its own. "Because of the two separate screen boxes, the angle of the first screen box can be adjusted to accelerate the material while the second screen box sits at a fixed angle. You can also run those screen boxes independently on their drives. The top box can be adjusted to accelerate material while the second box can be adjusted to run in reverse so that you retain some of the material and so capitalise on the efficiency of the screen," concludes Marais. ●

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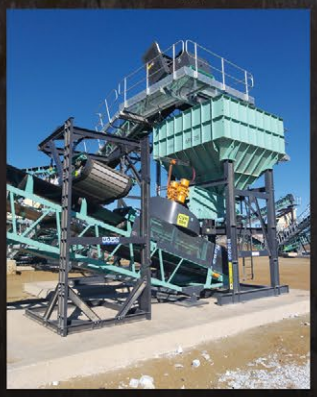

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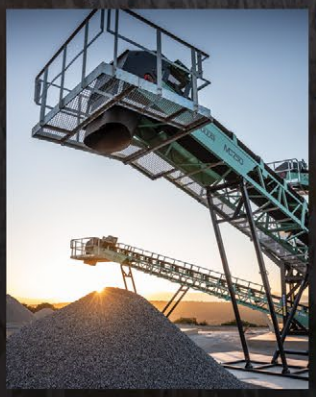

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Metso

MAXIMISING ENVIRONMENTAL COMPLIANCE WITH ASTEC HIGH FREQUENCY SCREENS

To meet their Environmental, Social and Governance (ESG) targets, quarries and mines are increasingly embracing dry separation methods to reduce water usage on their sites. Operations that use Astec high frequency screens can reap the benefits of using little to no water in their screening processes, says Casper Booyse, Regional Sales Manager at Astec Africa and Middle East (AME).

While sand and aggregates are key to the urbanisation trend globally, quarrying is also a water-intensive industry. Water is used in a range of processes, including mineral processing and dust suppression, among others. With experts warning of a serious global water shortage, sustainable water management within the extractive industry has become critical.

"In response to the growing imperative for water conservation, and to assist the industry and our customers, Astec Industries is proud to offer a wide range of high-frequency screens to produce specification sand product with the use of minimal to no water," Booyse says. "Dry classification is a process that has been used in the aggregates industry to manufacture specification sands for many years, but the technology has not been widely applied. However, it is now gaining traction globally as a preferred solution in the global aggregate and mining sector."

Astec's high frequency screens are engineered to provide higher production capacities and more efficient sizing when compared to conventional screens. High frequency screens feature aggressive vibration applied directly to the screen, providing a high capacity for the removal of fine material, as well as aggregate chip sizing and the production of dry manufactured sand. The frequency of the screen is mainly controlled by a vibrator. Its high-frequency characteristics differentiate it from a normal vibrating screen. High-frequency vibrating screens usually operate at an inclined angle and the hydraulic screen angle adjustment makes alterations quick and easy, reducing downtime.

Booyse explains that Astec high frequency screens utilise high-speed vibration of up to 4 200 rpm (for optimal screen efficiency and production). "Directly induced to the screen media, this allows for increased stratification and material separation. Screen efficiency is improved at high production rates as compared to conventional screens. Coarser material requires more amplitude and less frequency, while finer material requires less amplitude and more frequency."

He notes that variable high frequency screens are more versatile to tackle varied material conditions such as particle size distribution. "They have higher efficiency due to the incremental increase in frequency. These screens can also be used effectively to process manufactured sand for size segregation and for the removal of silt, which is typically 75 microns or below."

A further benefit offered by Astec's high frequency screens is a unique tensioning system. Booyse says that this provides the quickest screen media changes in the market. "The easy and safe replacement of each screen section translates into less downtime for screen changes and increased operation time," he stresses. ●

NO QUARRY LEFT BEHIND

Different quarries need different cone crushers. Weir Minerals is the only global manufacturer that offers both. TRIO® live and fixed shaft cone crushers are made for modern quarries with advanced hydraulics, wear resistant materials and the latest technology. You get what's right for your circuit. No unnecessary redesigns needed. Plus, with a lifelong commitment from the Weir Minerals global network, we've got you covered. Visit **info.global.weir/trio**

WEIR

Minerals

The L 120 – 330 is a heavy-duty, primary and secondary crushing and screening processing plant that includes a primary jaw crusher, a secondary cone crusher and a finishing screen all on one chassis.

PILOT CRUSHTEC ADDS JONSSON CRUSHERS AND SCREENS TO ITS STABLE

Pilot Crushtec International is introducing a new line of premium mobile crushers and screens in Southern Africa. The Jonsson range comprises tracked units, largely aimed at the premium high tonnage, heavy-duty segment of the crushing and screening market.

P.J. Jonsson och Söner is a Swedish mobile crushing and screening plant provider that has traditionally operated in the Nordic Region. Established in 1953, initially trading in fur and eventually construction machinery and used crushing equipment, Jonsson started manufacturing wheeled crushers in 1984, before venturing into the tracked market in 1998. To date, the company has supplied more than 350 tracked machines and in excess of 400 wheeled units.

Following the 2018 acquisition by Metso, Jonsson is on a drive to expand its business internationally, and southern Africa is one of the strategic markets. The brand will leverage Metso's existing eight year partnership with Pilot Crushtec to grow its footprint in the region.

"Our partnership with Pilot Crushtec is aligned with our strategic focus to expand our global footprint," explains Mikael Delbrant, Sales and Marketing Director at Jonsson. "We are excited to partner with Pilot Crushtec, an established name in the crushing and screening market in southern Africa."

The same view is shared by Adam Benn, Director, Capital Sales, North EMEA, CEA and Southern Africa at Metso, who commends Pilot Crushtec's focused business model, which has a strategic dedication to crushing and screening. The concentrated focus and unprecedented commitment to a specific line of products has, over the past three decades, served as the cornerstone of Pilot Crushtec's success.

"Pilot Crushtec is unique in its own way," says Benn. "The primary focus on crushing and screening has over the years allowed the company to develop a profound understanding of the crushing and screening sector, which uniquely positions them to forge long-lasting connections with their customers in southern Africa."

Jonsson's range comprises tracked crushers and screens, unique double crushers and screens, feeders and conveyors. "The Jonsson range is primarily focused on the premium, high tonnage, heavy-duty crushing segment and is ideally suited for demanding customers who appreciate high quality, high production and high operating efficiencies," explains Timo Nakari, VP – Jonsson Business Line at Metso.

Pilot Crushtec will initially focus on selected products, particularly the tracked double crusher concept as well as heavy-duty jaw crushers, cone crushers and screens, confirms Francois Marais, Sales & Marketing Director at Pilot Crushtec.

Marais says the focus is initially on products that complement the existing Metso offering. Key among them is the Jonsson L 120-330 double crusher, which combines the two Nordberg C120 and GP330 crushers and a screen on one compact tracked chassis – the only mobile unit of its kind available.

"The Jonsson L 120-330 double crusher is a gamechanger for the local market," says Marais. "Where customers would traditionally need to mobilise and run three separate machines, we can now bring an entire plant on one compact chassis. This is a unique proposition for the market; instead of three engines

The L 400 is a mobile secondary crushing unit, as well as an adaptable third stage.

The L 150 mobile jaw crusher is powered by a 400kVA generator set or via mains operation and is equipped with a Nordberg C150 jaw crusher.

The L 550 is one of the largest mobile cone crushers on tracks and a mobile secondary crushing unit.

Pilot Crushtec is expanding its product line up with the addition of Jonsson crushers and screens.

to maintain and three machines to transport, now there is only one."

The Jonsson L 120-330 double crusher, says Marais, will be a big benefit for mining contractors who, by their very nature, place value on ease of plant movement on and between sites. Once on site, they can mobilise and start production in a fraction of the time that it would take them to establish a traditional fixed plant.

In addition, Pilot Crushtec will offer two heavy duty Jonsson jaw crushers (L 150 and L 160), three large Jonsson mobile cone crushers (L 400, L550D and L 500D) and the Jonsson L 354 mobile screen. These models have been carefully selected to complement the existing Metso models.

"Of note is that the Jonsson range incorporates Metso crushers, a product that we are familiar with and have the expertise to service and support. With energy efficiency and sustainability in mind, dual-powered and fully electric variants are available," concludes Marais. ●

SNAPSHOT

The Jonsson range comprises tracked units, largely aimed at the premium high tonnage, heavy-duty segment of the crushing and screening market.

Following the 2018 acquisition by Metso, Jonsson is on a drive to expand its business internationally, and southern Africa is one of the strategic markets.

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AfriSam has centralised the process of aggregate distribution from its quarries.

JUST HOW IMPORTANT IS THE DISTRIBUTION OF CONSTRUCTION MATERIALS?

Glenn Johnson, AfriSam's Executive for Construction Materials: Operations says AfriSam is often viewed as only a cement, aggregate and readymix producer and that little thought is given to the fact that distribution plays a vital part in its operations. Ultimately it is through effective distribution that AfriSam gets its products to customers. Modern Quarrying found out just how vital distribution for AfriSam's construction materials (readymix and aggregates) is, the importance it places on safety, training, on-time delivery and how it navigates the current challenges in South Africa.

"Distribution at AfriSam is the connection between getting our final products from our operations to customers," says Johnson. "We are effectively a distribution company – that is the crux of it. A significant part of the organisation's focus is on the effective management of our distribution network, for aggregate, readymix and cement."

Centralised and de-centralised distribution

AfriSam decentralises its distribution network for its readymix business. "We effectively are located in three key geographical areas - Gauteng, KwaZulu-Natal and the Western Cape and have key personnel responsible for the distribution of our product in these areas. A central logistics

SNAPSHOT

"We are effectively a distribution company – that is the crux of it. A significant part of the organisation's focus is on the effective management of our distribution network, for aggregate, readymix and cement."

AfriSam decentralises its distribution network for its readymix business.

AfriSam has centralised the process of aggregate distribution from its quarries because it is, unlike readymix not a time-sensitive product.

Because of the dynamic load, driving a readymix truck is more demanding than driving an aggregate truck. AfriSam ensures that the drivers of readymix trucks have adequate training for these specialised driving requirements, but also for the specialised load that it carries.

Trucks are allocated to plants based on production capacity and demand.

Readymix trucks serve as moving billboards for AfriSam.

Readymix truck drivers are effectively trained and required to adhere to strict standards.

point in the region is responsible for managing the network of technical support on a day-to-day basis. This then culminates in the allocation of readymix trucks from plants for supply that must be done in a certain area. For each plant we'll know how many trucks are required and what the requirements are for on-time delivery," says Johnson.

He says that readymix distribution is more complex than aggregate distribution and this is the reason for the decentralised approach. "Because

Glenn Johnson, AfriSam Construction Materials Executive: Operations.

of the inherent characteristics of readymix concrete, and because you have to ensure that you have a dynamic load schedule should something go wrong, a central person that is monitoring the process is needed."

AfriSam has centralised the process of aggregate distribution from its quarries because it is, unlike readymix not a time-sensitive product. Readymix has a short duration time as the material characteristics change over time which could make it unusable by the customer if not delivered in time. There is less pressure to transport aggregates. "We centralise the distribution of aggregate per quarry. A central person is allocated to aggregate loads who controls the dispatching of this material on a daily basis from a load schedule that has been downloaded from a central point," Johnson says.

A fleet to enable effective distribution

AfriSam outsources the logistics for construction materials. "We enter into contracts with contractors to supply a service to our aggregate and readymix businesses. We determine the fleet size that we will require in order to be able to effect the size of our order book nationally and have to ensure that we have contracted a sufficient number of vehicles," says Johnson.

It requires impeccable logistics and enough vehicles to deliver consistently according to the customer's requirements.

Distribution at AfriSam is the connection between getting the final product from operations to the customers.

"We have strict standards that we impose on these contracts. In addition, we set clear standards in terms of the appearance, age, safety requirements of the vehicles, training, legal compliance of drivers to the Road Safety Act as well as AfriSam's own internal requirement for licensing and legal compliance," Johnson explains..

"AfriSam ensures that drivers are effectively trained as, even though it is outsourced, these trucks carry our brand and product and have to reflect AfriSam's values," Johnson says.

Johnson says there is a subtle difference between the driver requirements for trucks transporting aggregate and readymix. "Because of the dynamic load, driving a readymix truck is more demanding than driving an aggregate truck. AfriSam ensures that the drivers of readymix trucks have adequate training for these specialised driving requirements, but also for the specialised load that it carries. Such drivers have to know how to mix the concrete in the drum and this technical training has to ensure that once the product is collected from us, the characteristics of the readymix is not changed in transit," says Johnson.

A similar process of driver training is followed for the transportation of aggregate, but because such drivers do not transport a dynamic load, it is less technical.

The readymix trucks are branded as they are fully contracted only to transport AfriSam readymix. "Trucks transporting aggregates are not branded as contractors are allowed to transport for others in times of lower demand. From a marketing perspective, our branded readymix vehicles become billboards for a live display of our product," Johnson explains.

Measuring of efficacy

"On time delivery is vital. Customers do not want readymix arriving late. We have to have impeccable logistics and have enough vehicles in order to make sure that we are able to deliver as doing so late has a major impact on cost of production for AfriSam – and a financial impact for the customer," Johnson says.

Factors that complicate optimal distribution

Johnson lists loadshedding at the biggest factor that can potentially complicate effective distribution of especially readymix, from the batching plant to the customer's site. "Because we typically work in urban centres, loadshedding causes traffic bottlenecks when traffic lights do not work. The customer's expectations remain the same, but in order to deliver the same service we are often forced to make use of additional vehicles to counter this - and that comes at a cost," says Johnson. Other complications include delays on customer sites and the state of the country's roads that also have an impact of timeous delivery. A major challenge has been the demise of the construction industry, which has meant an impact on subcontractors that make a living from transport. "The downturn has made it difficult for them to procure vehicles and we have had to monitor the servicing of fleets closely to ensure that they perform optimally for our distribution needs," concludes Johnson. ●

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Booyco Electronics has been a leader in Proximity Detection Systems (PDS) for surface mining for the last 15 years.

PDS SUCCESS IS ABOUT **HOW PEOPLE EMBRACE IT**

Booyco Electronics has been a leader in the supply and installation of Proximity Detection Systems (PDS) for both underground and surface mining for the last 18 years. During this time the company has experienced that successful deployments of PDS technology are supported by an effective change management process as a focus on the people element that is vital to ensure that the benefits and objectives of PDS in mining safety, are fully realised.

Modern Quarrying spoke to Anton Lourens, CEO of Booyco Electronics about the important role successful change management plays in ensuring the success of this technology deployment, especially since there has been an increase in the uptake of PDS in line with the promulgation of the mine health and safety regulation for trackless mobile machinery.

During the multiple PDS deployments in the last 18 years, Lourens says Booyco Electronics realised that successful deployment of PDS involves user adoption so that there is an understanding of the purpose, the functionality and limitations of the technology.

"The people aspect and adoption is the most important in the PDS implementation journey," says Lourens.

"The providers of PDS solutions that an operation chooses is based on many factors," says Lourens. "Even though the technology used by various PDS may be similar, it is ultimately what people are comfortable with and what they adopt that determines its success".

"PDS technology is not a silver bullet to achieve safety at a mining operation," says Lourens. "Human input is needed for it to be effective. The technology is a mere enabler. Once people adopt it through change management, they can then use the information that it supplies and act accordingly. Only then can the PDS deployment be successful".

PDS technology assists the operator or pedestrians to be aware of potential safety threats.

"It is another layer of protection. If, however, the user does not give his/her buy-in, and they do not understand the intention of PDS, one is set up for failure," says Lourens.

Booyco Electronics' most successful PDS deployments have been on sites where thorough change management has been done and all levels in the operation was involved. "This included all stakeholders - from the coalface workers to management," Lourens explains. "They all gave buy-in to the impact and adoption of PDS and this assisted the successful

PDS technology is not a silver bullet to achieve safety on a mining operation.

The Booyco CXS solution providing a comprehensive and integrated response to Level 7, Level 8 and Level 9 safety levels – as defined by the Earth Moving Equipment Safety Round Table (EMESRT).

SNAPSHOT

Successful deployment of PDS involves user adoption that includes an understanding of the purpose, the functionality and limitations of the technology.

Even though the technology used by various PDS may be similar, it is ultimately what people are comfortable with and what they adopt that determines its success.

The people aspect and adoption is the most important aspect in the PDS implementation journey.

Booyco Electronics offers refresher courses as well as a continuous optimisation process with which it supports the continued effectiveness of the deployed technology.

Anton Lourens, CEO of Booyco Electronics.

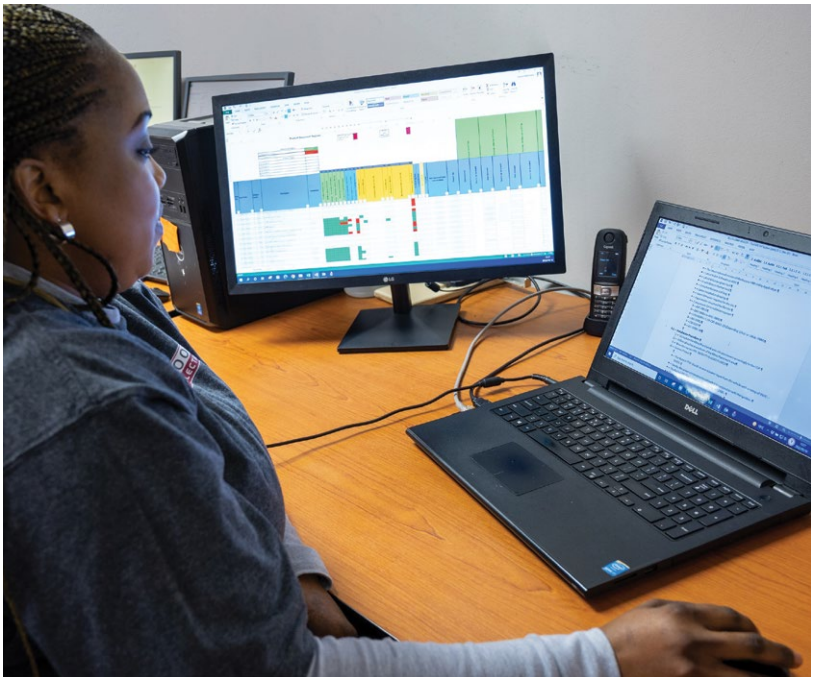
deployment of the technology as there was a clear understanding of the technology and seamless integration across all levels."

Change management separated into two parts

"Change management is critical," says Lourens. "Only by following a change management process do you get people to understand the importance of this technology, that it is life-saving technology and that it has an impact of production too."

Booyco Electronics separates change management into two parts. The first part pertains to the human aspect and training of how the technology fits into the mining operation, and deals with people's

The Booyco PDS has become synonymous with ensuring safety on surface mining sites.



Successful implementation of PDS requires a holistic approach that places value on technology and people.

behaviour and understanding of the reason for the technology.

"The second part includes a technical readiness assessment and understanding how the technology will impact the mine and maintenance. This includes how the person understands the purpose, benefits, and capabilities of the technology," explains Lourens.

"Booyco Electronics has a sense that it has to drive change management and has offered to assist customers with this critical process so they get the most value out of their PDS investment. We have found that some mines have good change management training departments and some don't. Depending on the level of need from the customers, we will assist and put in place a process to successfully adopt the new technologies," says Lourens. "The people aspect is the most important aspect of the PDS journey, and I believe it is more important than the technology itself."

The entire supply chain must commit

The deployment of this PDS technology has an impact on the mining operation and all the pillars within it. "All the stakeholders need to be committed – engineering, mining, maintenance and organised labour led by the mine's management. This will ensure that information is relayed to the rest of organisation. If all pillars are not involved from the start, there is misalignment of expectations," says Lourens.

"Change management needs to review risk assessments, scope of works, the understanding of the technology and the limitations it may have. This is specific to the operation as no single technology fits all requirements"

Lourens says that the process involves multiple engagements or interactions from Booyco Electronics' side. "Initially numerous assessments are done, we fulfil training needs, and can assist with traffic flow analyses while considering traffic management plans. These are then implemented and there may be subsequent rounds of engagements. Our interaction differs from operation to operation as it is dependent on the size of the operation and how extensive the implementation of PDSs on a specific operation is," concludes Lourens. Booyco Electronics offers refresher courses as well as a continuous optimisation process with which it supports the continued effectiveness of the deployed technology. ●

ENHANCING QUARRY SAFETY: **TRU-TRAC LEADS WITH CUTTING-EDGE CONVEYOR SOLUTIONS**

Safety in the quarrying sector is an essential aspect that cannot be overstated. Quarries, with their complex operations present a unique set of hazards that can pose significant risks to the health and safety of workers. Managing these risks is critical and this is where the innovative conveyor solutions technology from Tru-Trac play a vital role. Modern Quarrying spoke to Tru-Trac Rollers CEO, Jonathan Rogoff.

He explains that nearly three decades since its inception, the company has evolved from a pioneer in conveyor belt misalignment solutions to a global leader in providing comprehensive products and services aimed at minimising conveyor-related hazards and enhancing workplace safety and productivity.

"The journey began with the introduction of the groundbreaking Tru-Trac Tracking Systems in 1996," Rogoff says. This technological innovation autonomously corrects conveyor belt misalignment, guiding the belt back to its central position without the need for manual intervention and is today accepted worldwide as the solution of choice by conveyor operators."

He explains that in the early days, it was common practice for beltsmiths to manually track the belt by adjusting conveyor idlers while the belt was running—a risky and now obsolete method. The advent of Tru-Trac's technology made such practices unnecessary, paving the way for safer working conditions by eliminating the need for workers to be in close proximity to moving conveyor belts.

"The implications of conveyor belt misalignment are far-reaching, presenting not only safety hazards through potential slips, trips and falls due to material spillage but also contributing to belt damage and premature wear, increasing the risk of operational failures," he says.

Tru-Trac's maintenance-free tracking systems are designed to mitigate these risks and feature an installation process that is straightforward, with little to no maintenance required. Engineered with to respond instantly to any deviation from the belt's centre, this innovative solution does not cause any belt damage.

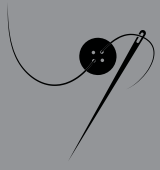
Expanding beyond belt trackers, Tru-Trac now offers a wide range of solutions including conveyor skirting, impact beds, standard idlers and frames as well as a variety of belt scrapers and ploughs. These additions to the company's conveyor solutions product offering have been instrumental in addressing workplace safety and maintenance challenges, with its high performance belt scrapers playing a crucial role in preventing conveyor belt

SNAPSHOT

This technological innovation autonomously corrects conveyor belt misalignment, guiding the belt back to its central position without the need for manual intervention and is today accepted worldwide as the solution of choice by conveyor operators.

Tru-Trac now offers a wide range of solutions including conveyor skirting, impact beds, standard idlers and frames as well as a variety of belt scrapers and ploughs.

Effective belt cleaning is vital as it avoids carryback as well as the strategic use of belt support systems to reduce dust and spillage risks.



Tru-Trac also offers a variety of options to suit different applications, from continuous to segmented skirting with an emphasis on customisation and wear resistance.

Tru-Trac's trained conveyor maintenance specialists conduct thorough inspections of conveyor systems, focused on preventative maintenance to avoid unplanned downtime and ensure optimal performance.

Tru-Trac emphasises the importance of trained maintenance teams capable of maintaining reliable and effective operations.

A Tru-Trac impact bed absorbing impact at a transfer point.

carryback—a commonly overlooked hazard that can lead to fires, slippery conditions and harmful dust.

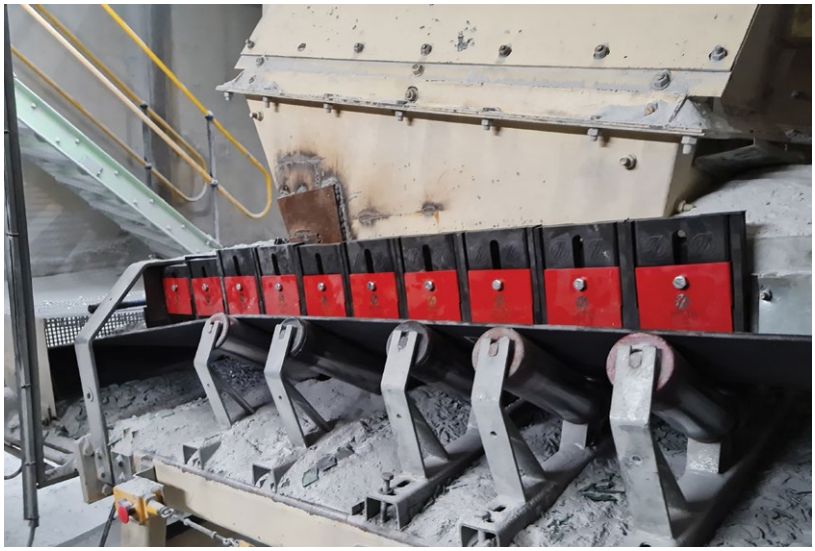
Rogoff emphasises the importance of effective belt cleaning to avoid carryback as well as the strategic use of belt support systems to reduce dust and spillage risks. Tru-Trac's adjustable impact beds, for example, allow for precise adjustments to the troughing angle, ensuring an effective seal between the belt and skirting rubber. These can be tailored to the specific needs of the quarrying operation.

The selection of skirting rubber is another area where Tru-Trac excels, offering a variety of options to suit different applications, from continuous to segmented skirting with an emphasis on customisation and wear resistance.

Shaun Blumberg, COO of Tru-Trac, highlights the company's commitment to safety through proactive maintenance and regular conveyor inspections. "A major differentiator is that Tru-Trac's trained conveyor maintenance specialists conduct thorough inspections of conveyor systems, providing detailed digital reports that focus on preventative maintenance to avoid unplanned downtime and ensure optimal performance. This approach is central to our mission of supporting the quarrying and surface mining industry's goal of Zero Harm.

Tru-Trac emphasises the importance of trained maintenance teams capable of maintaining reliable and effective operations while mitigating potential hazards like nip or pinch points with innovative solutions like the Tru-Trac Nip Guard and Safe Guard.

Through our dedication to innovation, safety and performance, Tru-Trac has established itself as a



Use of Tru-Trac I-Lock skirting will prevent loss of material on conveyor handling equipment.

A Tru-Trac V-Return Tracker keeping the conveyor centred in a dry cargo handling application.

critical partner in the mining and industrial sectors, demonstrating that proactive and comprehensive conveyor belt management is essential not only for operational efficiency but for the safety and wellbeing of all workers involved.

Tru-Trac operates an extensive world class manufacturing facility in Centurion, Pretoria, and continued investment in this facility has seen numerous processes brought in-house, ensuring better controlling quality, lead times and competitiveness. Manufacturing excellence is driven by international quality systems and incremental upgrading of technology ensures that the company's products and solution remain at the cutting edge, offering significant benefits to the quarrying sector. ●

BME unveils centralised blasting system in AXXIS range

Andries Posthumus, BME's AXXIS™ Global Electronic Initiation Systems Development Manager.

Omnia company BME has added another string to its technology bow, filling out its popular AXXIS™ electronic detonation range with the AXXIS™ Centralised Electronic Blasting System (CEBS).

According to Ralf Hennecke, Managing Director at BME, AXXIS™ CEBS is another demonstration of the company's commitment to constantly evolving its technology offerings, to ensure that the latest and best products are available to its customers.

"AXXIS™ CEBS is a premium digital detonator system for initiating explosives, augmenting our popular AXXIS™ Titanium system for large deep-hole surface operations, and AXXIS™ Silver for smaller blasting operations," said Hennecke. "It also represents the safest initiation technology available globally."

He highlighted that the AXXIS™ CEBS initiation system was designed for use in both general and specialised underground mining environments, being fully programmable, accurate and easy to use.

Andries Posthumus, BME's AXXIS™ Global Electronic Initiation Systems Development Manager, explained that the AXXIS™ CEBS system allows for two-way communication to take place in real time, with an electronic device initiating each blast by means of an electronic starter. The system compromises a blast controller on surface that monitors and reports all data and activities quickly and transparently. AXXIS™ CEBS includes a logging device which is used underground at the blasting face to log the detonators and conduct the necessary test functions.

"Information from the logger is transferred to a blasting box and on to the control box, which manages the entire blasting process from the surface," said Posthumus. "AXXIS™ CEBS is designed for enhanced control, precision and safe blasting – with enhanced safety, ease of use and flexibility."

He emphasised that, as the newest generation of AXXIS™ technology, CEBS also makes the logging and testing of detonators more efficient. By creating a central point for blasting, it allows users to save time when setting up and

FUCHS LUBRICANTS SOUTH AFRICA introduces latest calcium sulphonate grease for mining

One of the world's largest global diversified natural resource companies has standardised on FUCHS' RENOLIT CSX ULTRA across all its heavy mobile equipment, following extensive testing. The calcium sulphonate complex grease is now being blended locally by FUCHS LUBRICANTS SOUTH AFRICA for its extensive mining customer base, reveals Dave Gons, Mining Export Technical Export.

"RENOLIT CSX ULTRA rom FUCHS is a grease capable of meeting and exceeding all major mining OEM grease performance criteria at a sustainable cost," says Gons. It is in line with changing maintenance practices as mining operations push to reduce the number of products used on-site.

A simple lithium grease has a typical dropping point of about 190°C, which is the temperature at which it transitions from a semi-solid to a liquid. However, a lithium complex grease can withstand even higher temperatures, with a dropping point of up to 260°C.

"Calcium sulphonate greases have superior high-temperature performance," notes Gons. Their dropping point and high-temperature life are superior to that of lithium greases, allowing them to operate at elevated temperatures.

They also perform better than lithium grease in terms of oxidation resistance, making them much more stable under challenging conditions. Another benefit is higher mechanical stability compared to lithium greases.

"RENOLIT CSX ULTRA from FUCHS offers several advantages, particularly in the context of sustainability and rising lithium prices," notes Gons. It performs well even at elevated temperatures, making it idea for

arduous applications such as mining.

It maintains its consistency even in the presence of water, which is crucial for mining equipment that is often exposed to chemically treated water or other process fluids. In addition,

conducting blasts.

"The system features full two-way communications, allowing better monitoring of the entire blast process from the lock stage through to initiation," he said. Components of the AXXIS™ CEBS system include an AXXIS™ UG Logger, AXXIS™ CEBS Key Logger, AXXIS™ CEBS Blasting Box and BME's Blastmap™ Underground blast design software. It is supported by BME's AXXIS™ electronic delay detonators, which use two-core double insulated downline cables and achieve higher resistance to electrostatic discharge and high induced ground currents for greater safety.

Hennecke noted that BME's leading technology innovations are powerfully combined with its wide range of technical services, making the company a global blasting partner of choice for a growing number of blue chip mining operations. ●

RENOLIT CSX ULTRA resists breakdown or shear and retains its consistency under operating conditions with high water contamination.

It provides robust protection against wear and extreme pressure for enhanced equipment longevity. The optimised base oil viscosity ensures a thicker lubricant film to protect against shock loading, heavy loads, and boundary lubrication. It also guards against corrosion, especially in harsh environments.

"In mining applications in particular, RENOLIT CSX ULTRA provides excellent extreme pressure protection by forming a durable lubricating film. It reduces wear and extends the life of critical components such as pins, bushes, slew gears, and slew bearings," explains Gons. ●

Empowering drilling excellence: Powerbit Rocktools leading the way

For over two decades, Powerbit Rocktools has set new standards in the drilling industry and innovation, solidifying its position as a trusted partner for drilling professionals worldwide.

The company's focus on building long-term partnerships is exemplified by its collaboration with clients like Torque Africa Exploration, where downtime is not an option. Due to Powerbit's presence in Africa since 1996, the company has evolved to address the continent's unique drilling demands with unwavering commitment and excellence.

The company distinguishes itself through its steadfast commitment to understanding and addressing customers' unique challenges. Nardus Bezuidenhout, Director at Torque Africa Exploration, attests to this, emphasising that Powerbit is not just a supplier, but a collaborative partner in creating tailored solutions for their water drilling business.

Bezuidenhout says, "There is great satisfaction in knowing that, whenever I need support, the Powerbit team is just a phonecall away. They always go the extra mile to make sure I have no downtime and can always rely on the quality of their products."

Powerbit's extensive product portfolio, spanning DTH hammers and bits, RC hammers and bits, tri-cone bits, top hammer bits and rods, casing systems, grinding machines and more, is remarkably affordable, but maintains the highest levels of quality and cutting-edge technology.

Recognising the ever-changing nature of the drilling industry, Powerbit engages in global collaborations with advanced research centres and technology experts in Taiwan, China and Japan. This proactive approach ensures that Powerbit remains at the forefront of technological advancements, enabling them to meet clients' evolving needs effectively.

Collaboration with these cutting-edge research centres in Asia also ensures that Powerbit can tailor their products to meet clients' specific needs effectively.

Powerbit's product range is purposeful and comprehensive, catering to diverse drilling needs across industries. Each tool, meticulously engineered for efficiency and longevity, is a testament to Powerbit's commitment to empowering progress in drilling operations.

The value of reliable, cost-effective drilling tools in today's industry cannot be overstated. Powerbit recognises these tools' vital role in enabling clients' success and driving infrastructure projects that underpin local economies.

From DTH hammers and bits to top hammer drilling tools and RC hammers and bits, Powerbit's versatile range is engineered to ignite the power of remarkable rock drilling in various working conditions and industries.

Experience the power of precision-engineered rock drilling tools and exceptional customer support with Powerbit Rocktools. Connect with us and embark on a journey of progress and empowerment that has been driving the southern African mining industry for almost two decades. ●

Sandvik launches upgraded 800i cone crusher range

Sandvik Rock Processing is introducing its upgraded 800i cone crusher series. A major talking point is the new ACS-c 5 automation and connectivity system, which integrates the capabilities of all of Sandvik's crusher modules and subsystems into a single automation system.

The upgraded Sandvik 800i cone crusher series is now available globally, effective March 1, 2024, confirms Nils-Peter Ahlqvist, Sales Support Manager, Africa & Latin America – Crushing Division at Sandvik Rock Processing.

"The Sandvik 800i cone crusher range's combination of high crushing forces, reliability and simplicity make it easier to operate, manage, maintain and service, resulting in productivity and uptime gains that are gamechangers for operational performance," says Ahlqvist.

The latest Sandvik 800i crushers with new ACS-c 5 combine simple, yet robust mechanical design with powerful user-friendly automation to better support diverse operational roles. The new role-based interaction functionality simplifies the work of operators, maintenance personnel and engineers by offering guidance, access to valuable data and tools for proactive maintenance and optimisation.

The ACS-c 5 automation system guides the operator through alarms and recommended actions, streamlining the decision-making process during alerts and minimising the impact of potential issues.

"Maintenance personnel have access to an improved historical and operational data log, providing a comprehensive overview of the crusher's performance. The new automation system offers engineers more opportunities to monitor, analyse and optimise the crusher's performance," explains Adam Taylor, Business Line Manager Crushing Solutions – Africa at Sandvik Rock Processing.

With sustainability in mind, the upgraded Sandvik 800i crushers are designed to eliminate inefficiency in operating mines, as well as in greenfields operations.

"With the latest 800i crushers, we are able to produce much finer product (down to mill feeds of sub 6 mm) from our crushing and screening circuits, ultimately resulting in improved milling and overall process performance. This translates into less energy consumed and reduced wear in downstream processes. In other words, we allow customers to 'crush more to grind less'," says Ahlqvist.

The upgraded Sandvik 800i crushers are ready to be connected to the SAM by Sandvik cloud-based digital assistant. SAM collects information from all connected Sandvik equipment to provide a complete overview of the entire operation.

"With the new SAM mobile app for iOS and Android, customers can have an overview of their crushing fleet, monitor equipment data and key parameters, receive alarms from the ACS system directly in their pocket and get recommended actions created to help them solve issues more quickly," concludes Ahlqvist. ●

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- Low maintenance - reduce safety risks
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