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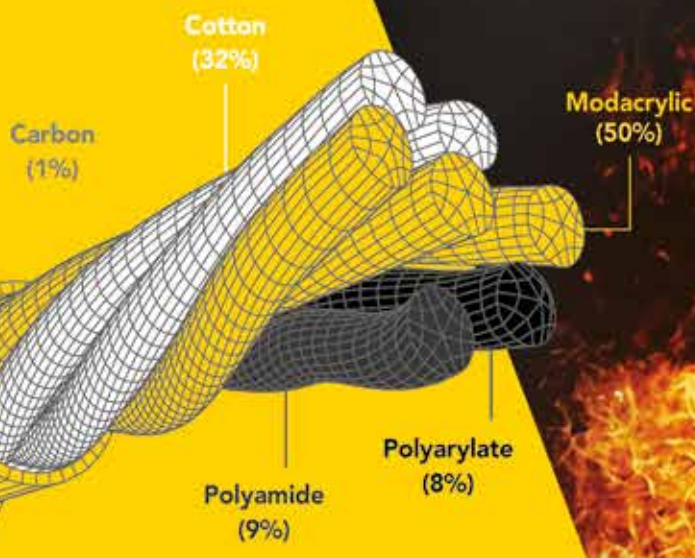
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SAFETY IN SOLITUDE: HOW TECHNOLOGY PROTECTS LONE AND REMOTE WORKERS

**PSYCHOSOCIAL RISK
MANAGEMENT: MEETING
LEGAL REQUIREMENTS**

**TOP TIPS: CHOOSING
LED STRIP LIGHTS THAT
MITIGATE ELECTRICAL
RISKS**

**HOW TO SAFELY
UPGRADE ELECTRICAL
SYSTEMS IN ASBESTOS-
PRONE BUILDINGS**



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Welcome to the first edition of **Safety Solutions** for 2024! We kick off the year by taking a closer look at electrical safety, psychosocial risk management and lone/remote worker safety.

Any problems experienced by lone and remote workers can escalate very quickly without good safety practices and technology in place to help with an immediate emergency response. In these situations, technology such as lone worker apps can be deployed to decrease the risks for staff operating in isolation. In this issue, Petra Hakansson speaks with **Safety Solutions** about the key aspects that an organisation should consider when selecting and deploying this type of software.

The legal requirement to manage psychosocial hazards is not new — in fact, it has been present in the health and safety legislation of many countries for decades. However, a great deal of misinformation still surrounds the concept of psychosocial risk management. Ranjeeta Singh offers insight as to how organisations can ensure that their management of these risks complies with legal requirements.

Finally, the significance of electrical safety in underground settings, such as mining and tunnelling, cannot be overstated. Hazardous area lighting experts, MineGlow, have penned some top tips for mitigating electrical risks and upholding safety standards when opting to use LED strip lights in underground environments.

We hope you enjoy the issue — and as always, if you have an article, case study or new product

you'd like to share, please do get in touch on the email address below.



Amy Steed
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www.safety solutions.net.au/magazine

Letter to the editor

Note from the Editor:

Following our November 2023 issue of *Safety Solutions*, one of our observant readers picked up on some issues with the stock images that were used to depict workers carrying out their duties at height. While we are always conscious of the need to portray correct safety procedures, these illustrative stock images are limited and — as was correctly noted in this case — do not always convey Australian safety standards with 100% accuracy.

Hi *Safety Solutions*,

I have noticed a few discrepancies with the images used on pages 10–11.

Page 10:

- On both lanyards attached to the dorsal ring, I can't see the energy absorber (this should be located as close as possible to the worker). The lanyard is also around the wrong way.
 - Lanyards should be as short as possible (use an adjustable lanyard).
- Page 11:
- The scaffold hook is not locked into position (it is open, which is incorrect).
 - The second lanyard is back hooked (I don't believe this is correct practice).
 - The safety harness on the worker appears to be loose.
 - The set-up shows a fall arrest system in use (a restraint system is much better).
 - Is the anchorage point rated at 15 kN?
 - How did both the workers get to this position on the roof, when scaffold hooks don't close on attachment points?
 - Lanyards look damaged (dark marks — are they burns?).



IN THE NEWS



istock.com/zorandinzr

CRANE HIRE COMPANY FINED FOR BREACHING SAFETY REGULATIONS

Crane hire company Halifax Crane Hire Pty Ltd has been fined \$12,000 at a retrial for failing to ensure the required number of people were involved in the use of its crane at a construction site. The company was found guilty of breaching the now-repealed Occupational Safety and Health Regulation relating to the number of people required to be involved in the use of cranes. The company was originally fined \$40,000 in May 2022 after a trial, and it appealed the conviction and sentence. The Supreme Court allowed the appeal against conviction and a retrial was held.

The incident occurred in March 2017, after the company supplied a 70-tonne crane, a crane operator and a dogger to a construction site being run by Gran Designs WA Pty Ltd to assist in moving concrete panels being used to construct a house in the town of Yarloop.

The relevant regulation at the time stipulated that the responsible person must ensure that where a crane with a maximum rated capacity of greater than 60 tonnes is used at a construction site, there must also be at least one dogger and one rigger or two doggers or two riggers involved in the use of the crane, as well as a crane operator. Each must also have experience in the use of such a crane.

In this instance, Halifax sent one dogger and one crane operator, with no other licensed dogger or rigger at the construction site. Acting WorkSafe WA Commissioner Sally North said the regulations existed to ensure that work was done safely and should never have been ignored.

“The result of the retrial is confirmation that Halifax did not comply with their obligations under the regulations, acting in a way that was contrary to safe work practices. This case should serve as a reminder to all employers that they are responsible for worker safety and that everyone on a work site needs to adhere to the workplace safety regulations,” North said.

NEW SAFEWORK INSPECTORS TO PROMOTE HEALTH AND SAFETY IN NSW

New SafeWork NSW graduates have joined the organisation's ranks, to help ensure the safety of workers on job sites across the state. Each of the 35 new graduates specialises in a select number of different fields regulated by SafeWork NSW, as part of the Diploma of Government (Workplace Inspection). These include construction, health and safe design, explosives and safety audits, investigations and emergency response.

The inspectors will be based across the state in metropolitan and regional locations, to ensure communities have timely responses to incidents and requests for service by inspectors with local knowledge and experience. The 35 graduated inspectors were joined by six experienced inspectors who graduated with an Advanced Diploma of Government (Workplace Inspection).

These recent graduates will ensure that workplaces across NSW uphold a high standard of health and safety.

“Our inspectors are on the front line of providing safe worksites across the state and we cannot thank them enough for their commitment to safer and healthier work in NSW. We wish our 35 recently graduated inspectors the best of luck in their new careers,” said Trent Curtin, Head of SafeWork NSW.



istock.com/south_agency

HOIST SAFETY BLITZ FOR SA AUTOMOTIVE INDUSTRY

Inspectors from SafeWork SA have issued stop work notices against 11 automotive workshops for operating dangerous vehicle hoists and pressure vessels. During the first four months of a six-month campaign to improve worker safety in the automotive industry, SafeWork SA inspectors performed 51 compliance audits across metropolitan and regional automotive workshops, issuing 146 improvement notices.

The campaign targets high-risk plant such as vehicle hoists and pressure vessels. A prohibition notice is a directive issued to an employer instructing them to stop work immediately due to the severity of the risk until compliance measures are implemented to mitigate the workplace hazard. Improvement notices are issued when safety issues are identified — work can continue while the improvement notice is being actioned; however, the issue must be fixed within a specified time.

Vehicle hoists require workers to position themselves directly under suspended vehicles to carry out mechanical work. To ensure worker safety, all safety components must be operational and fit for purpose. The compliance audits identified several breaches, such as hoists and pressure vessels not being operated or maintained to manufacturers' specifications; unregistered and poorly maintained pressure vessels; and vehicle hoists that had not had a major inspection at 10 years, as required.

SafeWork SA inspectors also provided advice and information in relation to vehicle hoists and pressure vessels as part of the campaign. The automotive industry reportedly provides direct employment to almost 30,000 South Australians. The majority of these businesses are small and family-owned enterprises.

NEW CODE OF PRACTICE TO ELIMINATE GENDER-BASED HARASSMENT

Safe Work Australia has published a model code of practice, *Sexual and gender-based harassment*, to provide practical guidance for persons conducting a business or undertaking (PCBUs) on how to eliminate or reduce the risk of sexual and gender-based harassment at work.

PCBUs must take a proactive and preventive approach to sexual and gender-based harassment, whether it comes from colleagues, customers or the public, online or in person. Safe Work Australia advises PCBUs to identify and assess the risks, eliminate or minimise them so far as is reasonably practicable and review their control measures to ensure they are working as planned.

Managing the risks may include changing the layout of the workplace and redesigning the work or the way it is carried out — training and policies alone are not effective or reliable controls. PCBUs are advised to consult their workers on the risks of sexual and gender-based harassment as well as other psychosocial hazards.

The model code should be read alongside the code of practice: *Managing psychosocial hazards at work*. Sexual and gender-based harassment often occurs with other psychosocial hazards and PCBUs are advised to consider both hazards when managing risks to the health and safety of workers and others.



SWA CAMPAIGN URGES WORKERS TO BE SILICA SMART

Safe Work Australia has launched a new phase of its 'Clean Air. Clear Lungs.' occupational lung diseases campaign to improve understanding of the hazards of silica dust and the duties under work health and safety laws to manage the risks. The campaign provides resources to help identify hazards and eliminate or minimise the risk of exposure to silica dust in the workplace. Key WHS information is available in English, Chinese, Arabic, Hazaragi, Vietnamese and Korean.

Silica dust is produced when materials or products containing silica such as stone, bricks, concrete or tiles are cut, drilled, polished or ground. Particles of silica dust are small and can lodge deep into lungs, causing lung damage and serious diseases such as silicosis and lung cancer. Workers in construction, manufacturing, tunnelling, demolition, mining, quarrying and stonemasonry can be exposed to silica dust at work.



IN THE NEWS

TILER ORDERED TO REPAY \$92K IN WORKERS COMPENSATION



A Melbourne tiler who injured his back while working for his brother-in-law's company has been convicted and fined \$92,774 after he returned to work while continuing to receive workers compensation payments. Rahmatullah Jafari, 28, pleaded guilty to one charge of fraudulently obtaining payments; along with the fine, he has also been placed on a two-year Community Corrections Order requiring him to perform 240 hours of unpaid community work.

Jafari's employer, Excellent Tiling and Waterproofing Pty Ltd, was separately fined \$1000 without conviction after pleading guilty to one charge of failing to notify that a worker who had been receiving weekly payments had returned to work.

Jafari reportedly lodged a workers compensation claim after sustaining a back injury in September 2019 and continued receiving payments until February 2022, when the fraud was uncovered. An investigation revealed that Jafari had carried out tiling work at a number of properties not only for Excellent Tiling but also for his own tiling company, while receiving workers compensation. On all his certificates of capacity, Jafari declared he had not worked.

Roger Arnold, Executive Director (Insurance) for WorkSafe Victoria, said this kind of dishonesty undermined the integrity of the WorkCover system, adding that weekly workers compensation payments are there to help Victorian workers who genuinely need help to recover from an injury and get back to work.

"If you are caught cheating the system the consequences will be serious, including having to pay back any payments you were not entitled to," Arnold said.



QLD TO STRENGTHEN ELECTRICAL SAFETY LAWS

The Queensland Government has outlined a proposal to strengthen the state's electrical safety laws, following a review of the *Electrical Safety Act (2002)*. The review and subsequent public discussion paper, released in 2023, involved

consultation with industry, registered unions and the community, to help inform the state government's efforts to address the electrical risks posed by emerging technologies.

The government plans to legislate to expand the definition of 'electrical equipment' to include some high-risk extra-low-voltage items because of the potential risks they pose. Consultation identified items such as solar PV modules and some lithium-ion batteries as being of particular risk. The government also seeks to update the definition of 'electrical installation' to ensure it covers modern energy generation systems, as well as new and emerging technologies such as battery energy storage systems.

The Queensland Government will also establish a working group to ensure the legislative definition of 'electrical work' is clear, fit for purpose and adaptable to ongoing advancements. A roundtable chaired by the Commissioner for Electrical Safety was also convened to consider safety improvements for those who work on electric vehicles, with outcomes to come under national consideration later this year.



COMPANY FINED FOR ENGINEERED STONE EXPOSURE RISK

A company has been convicted and fined \$28,000 for exposing workers to the risk of respirable crystalline silica while manufacturing engineered stone at a Knoxfield factory. The company, Miter Square Pty Ltd, was fined \$7000 without conviction in November 2022, after pleading guilty to one charge of failing to ensure a workplace under its management and control was safe and without risks to health and one charge of failing to maintain a safe workplace. Following an appeal, the Melbourne County Court imposed a conviction and increased the fine amount by four times. The company was also ordered to pay costs of \$3750.

In October 2020, an inspector from WorkSafe Victoria attending the factory observed a worker using a handheld power tool to polish a slab of engineered stone, without the use of an integrated water delivery system, on-tool extraction system or local exhaust ventilation. A significant amount of dust was observed on the floor, on horizontal surfaces and objects throughout the factory. There was also evidence of workers using a high-pressure hose and brooms with bristles to clean up dust at the workplace.

During a subsequent visit from WorkSafe inspectors, the company's director informed them that the workers use respiratory protective equipment to control the risk of exposure to respirable crystalline silica. However, none of the respirators at the workplace complied with the regulations; one had no filter and another was found to have the wrong type of particulate filter, which was also full of dust. An investigation found that a sample of engineered stone seized by the inspectors had a crystalline silica content of 82%.



Leather work boot

The DeWalt AKRON Pro Comfort Extreme Duty leather work boot is a protective and versatile work boot designed for heavy-duty workplace situations. With the highest slip resistance rating (C rating) and 300°C high heat resistance, the AKRON outsole is built for durability.

Featuring three innovative cushioning and support layers and memory foam for optimal foot and arch support, the AKRON provides comfort for wearers who are on their feet for long periods of time.

The AKRON's upper is made from water-resistant premium nubuck leather with a wide-fit ergonomic steel toecap, delivering all-day comfort, breathability and supportive fit.

Stanley Black & Decker Inc

www.stanleyblackanddecker.com



Gas detector

The Emerson Rosemount 925FGD Gas Detector is the first Rosemount-designed and -engineered point gas detector. It has been designed with high-performance gas leak detection for accuracy, response time, operating temperature ranges and zero drift specifications. Using non-dispersive infrared (IR) technology, the gas detector is designed to provide early combustible gas leak detection within the user's processes to help to keep workers safe while reducing greenhouse gas emissions.

The product includes an advanced Local Operator Interface (LOI) and a smart sensor module. Built for extreme environments, it comes with a factory pre-calibrated sensor to butane, propane, methane, ethylene or ethane. It can be calibrated offsite and installed later, and sensors retain their own configuration settings and calibration information. This enables calibration and maintenance without additional tools, reducing maintenance costs and downtime.

The gas detector is certified to SIL2, ATEX, Canada, US and IECEx safety standards.

Emerson Automation Solutions

www.emerson.com/au/automation



Air flow monitor

The HEMCO AirFlow is designed to continuously monitor the face velocity air flow of fume hoods. The AirFlow monitor can also be selected and calibrated at a desired FPM velocity set point.

If the hood face velocity falls below the set point, an audible alarm sounds and a visual red indicator light appears. The air flow alarm is factory installed or can be field installed at 115/60 Hz AC.

HEMCO Corporation

www.hemcocorp.com

Cut protection safety glove

The uvex Bamboo TwinFlex D xg is an 18-gauge cut protection glove (Cut Level D). Bamboo-viscose on the inside of the glove offers noticeable comfort for the skin of the wearer, while the smooth fit and high moisture absorption provides long-lasting comfort and high wearer acceptance.

With a flexible fit, the glove adapts precisely to fit the shape of the hand within three to five minutes of wearing. The glove fibres also offer a good level of protection against abrasion and cut hazards. The additional uvex protexxion zone in the area between the thumb and index finger is claimed to provide double the abrasion resistance (200%) compared to the inside of the glove to increase its durability.

Due to the Xtra-Grip aqua-polymer foam coating, the Bamboo TwinFlex D xg offers good grip in dry and slightly damp/oily conditions. In addition, the glove features a total of 45% sustainable materials: recycled polyamide and bamboo-viscose, which is based on renewable raw materials.

UVEX SAFETY AUSTRALIA LIMITED PARTNERSHIP

www.uvex-safety.com.au



A full-page photograph of a surveyor in a field. The surveyor is wearing a white hard hat, sunglasses, and a high-visibility yellow vest over a white t-shirt. He is holding a clipboard in his left hand and adjusting a surveying instrument on a tripod with his right hand. The background is a vast, flat field of golden-brown crops under a clear blue sky.

SAFETY IN SOLITUDE

HOW TECHNOLOGY PROTECTS LONE AND REMOTE WORKERS

Many organisations employ workers who carry out their duties remotely or in isolation. Any safety issue these workers encounter — be it a car accident, medical event or an accident with machinery, water or working at a height — can escalate very quickly without good safety practices and technology in place to help with an immediate emergency response. Lone and remote worker safety expert PETRA HAKANSSON, CEO of Guardian Angel Safety, speaks with *Safety Solutions* about how organisations can adopt new practices and technology to improve the safety of workers.

How does technology help improve the safety outcomes of isolated and remote workers?

It removes too much reliance on humans remembering to check in or noticing someone has failed to check in. Technology will automate things like welfare checks and monitor geo-fenced areas. It will also protect staff from being responsible for each other and potentially having to respond to a serious incident involving a colleague, which could expose them to significant psychosocial harm. Technology alerts such as failed welfare checks, SOS, help, etc can be automatically sent to a professional provider to respond.

What should an organisation look for when selecting a lone-worker solution or provider?

I'd recommend a holistic provider who can assist with identifying the best fit-for-purpose solution for your particular risk. It may be that the best solution is to use a mix of technology and gadgets/devices. Your provider needs to be able to commission devices, train users (including refresher training down the track), provide supporting software to manage and connect devices, store all your user data, perform frequent testing and reporting, and provide 24/7 monitoring and response.

How can organisations identify an effective isolated worker management solution?

The starting point is a risk assessment to better understand lone worker risks for your people and organisation. You'll need to consider what tasks people undertake and how they do them, ie, do they work at height, in a confined space, with animals or unknown people, or in remote locations with no cell cover?

Is there a suitable solution for organisations with isolated workers inside buildings, where cell cover is not always available?

Yes, there is. Satellites need a view of the sky to locate you, and communications satellite networks like Iridium are the same; they need a view of the sky to transmit any alerts or messages. Some solutions will bridge the pendant worn by the worker to a comms box left in the vehicle (or anywhere outside in view of the sky). Using commercial-grade RF technology, the range is around 2 km (from pendant to comms box). If you can connect your mobile phone to the Wi-Fi network in the building, you can also enable smart routing on some satellite solutions.

Is it enough for an organisation to use personal locator beacons (PLBs) for staff outside of cell cover?

It depends on what you are looking for from a safety solution. Suppose more enhanced features, such as two-way communications, welfare checks, geo-fencing and visibility on a map of where your team are so you can communicate and coordinate, are NOT part of your requirement. In that case, the PLB or EPIRB may be adequate for you. The HSWA clearly states that a PCBU must provide “effective works of communication”. How that is interpreted is less clear.

Will a lone worker app work through screen lock?

There are dozens of lone worker apps on the market. You can pair some apps with a Bluetooth button, which will sometimes (not always) work past the screen lock, provided the app is launched and running in the background. Similarly, some apps with a “shake to raise alarm” feature will work past screen lock. You need to get the supplier’s written verification on this and thoroughly try it before buying. Ultimately, users and how they utilise their mobile phones will affect the reliability of any solution.

Do lone worker apps drain the battery on a mobile phone?

Yes, it will drain faster. How much faster depends on the phone’s age and model, the phone’s day-to-day use, the phone, the historical use of the phone, the particular lone worker app in use, how optimised it is and where you are. For example, if you’re inside, the satellite must work harder to find you. If you leave navigation maps running on your phone with a destination location set all day, you’ll know how fast it might drain.

Some organisations may prefer a small keyring size or ID badge-style duress pendant.

What do they need to know?

How long will the battery last with constant tracking? If your workers enter buildings, you want the tracking updates (sending updated locations to mapping software to locate them if they’re in trouble) set to at least three minutes. We prefer one-minute updates. Because satellites can’t see you inside a building, we can see the breadcrumb trail and figure out where you are. Many

pendant manufacturers state three days or 100 hours, but it’s based on the location, only being sent when the alarm is activated. This is no good if you’re inside a building. Ask what the frequency of location sending is. Satellites are always tracking, but we need the location actually to be sent somewhere in order to see it.

Another important question is, “Is it SAR tested?” You must know it’s safe for your workers to wear all day. Ask for the lab certificate. GPS devices are communicating with the satellites constantly, omitting radio frequencies, so you need to know it’s at a safe level. Most ID-style badges are worn on the chest, and it is not safe for constant transmission when it’s sitting on this part of the body. They typically also don’t have the battery life to frequently track anyway.

When Starlink launches its comms service with mobile phones, will satellite-connected devices be needed anymore?

It will be many years before the Starlink network has enough satellites to create a reliable network with no black spots. The last testing case I read showed the average send time on the network was around 30 minutes. And there will not be constant tracking, as you’re still dealing with a mobile phone whose battery will drain, and the more sophisticated features like welfare checks or visibility will no longer be available. The same goes for the iPhone with a satellite connection for the emergency button. It’s not for communication; it’s only for emergency calls and needs line of sight. We’re still a few years away from Starlink or iPhone being reliable safety tools.

If an organisation has GPS solutions in the vehicles, is that enough?

Only if you’re solely concerned with the safety of your vehicle and the person while they’re in it. And only if it has rollover, impact alerts and an SOS button. But even then, most vehicle solutions rely on cell cover to transmit location and alerts, so it won’t transmit if the vehicle leaves cell cover. The breadcrumb trail and alerts you see when you log onto your vehicle solution interface are often not live. It collects and stores the data when the vehicle can’t connect to the cell cover and then uploads it when cell cover is available once more.

There are solutions which can be Iridium-connected, so if you’re looking at that, make

sure you also have a way to communicate with your worker in the vehicle. If you get an impact alert, for instance, you want to be able to verify that it’s not just harsh driving on a bumpy road. Otherwise, you will have to treat it like a real incident and send help, which could potentially waste valuable resources. And, of course, you still have no protection for the worker once they’re outside the vehicle. It all depends on what your safety priorities are. Some organisations use Garmin satellite communicators allocated to vehicles, so that they know without a doubt that their staff have communications and the ability to raise help no matter where they are.

How should organisations evaluate which remote worker solution is right for them?

Many larger companies end up with a solution that includes apps, cell-based wearable devices, satellite wearable devices, etc. And don’t forget to ask your potential supplier many questions about the key deliverables for a solution to be safe: where does the alert get sent to, and how? If it’s reliant on electronic messaging such as email or SMS, it’s not best practice. Is the monitoring station graded? Do you get to test your solution every month? How are the operators trained, and what process do they follow? Can you tailor the response instructions to suit each team/worker? Where is all the user and response instructions data stored? Is this secure? Is it easy to maintain? Who maintains it? What reporting can you get?

It’s a big investment in terms of time and money to get the best solution in place. Your supplier should be collaborative and be your industry expert to rely upon and trust. The right solution will deliver the best safety every day, 100%.



Petra Hakansson, CEO of Guardian Angel Safety

SEA AT 40: A CHRONICLE OF INNOVATION AND SAFETY

The 1980s: Laying the Foundations for a Safety Revolution

In 1984, Goran and Flisa Berndtsson founded Safety Equipment Australia (SEA) as a small family business, starting as the exclusive agent for Sundström products. The company, rooted in family ties and a dedication to safety, began its journey with door-to-door sales and a strong focus on training and technical support.

This hands-on approach was more than just selling products; it was about educating users on the importance of respiratory protection.

Graham Powe, Managing Director, recalls the early days.

"SEA started with a clear mission to educate the industry. The auto repair shops on the Northern Beaches of Sydney were our first clients. We didn't just sell products; we taught people why they needed them."

A period of rapid growth followed with SEA establishing customers such as aluminium smelters and large mining groups.

The latter part of the decade saw SEA diversifying its product range, adding Peltor hearing protection in 88 and becoming the Australian exclusive agent for two additional Swedish brands, Interspiro and Trelleborg protective products, in 89.

For SEA, the 80s were not just about establishing a business; they were about developing a culture of safety and setting a standard for excellence that would define the company for years to come.

The 1990s: A Decade of Pioneering R&D and Expansion

In the 90s, SEA embarked on an evolutionary journey, pivoting towards intensive research and development.

SEA delved into studying human physiology's interaction with respiratory protection. This led to the establishment of an in-house lab and engineering department, marking a significant step towards self-driven innovation.

SEA's commitment to superior product quality was evident. The crowning achievement was the launch of the SE400 positive pressure demand PAPR, a pioneering product with built-in software management.

As Graham Powe recalls, "Our solutions were much more advanced than what was available at the time."

This period of intense R&D and expansion solidified SEA's reputation as an innovator and leader in the respiratory protection industry.

The 2000s: Navigating Local and Global Challenges

The 2000s were transformative. SEA organised the International Society of Respiratory Protection (ISRP) conference in Sydney and also supplied the SE400 units to emergency services for the Sydney 2000 Olympic Games.

SEA responded to global events too, supplying products for the Olympic Games in Greece in 2004 and to various U.S. departments following the 9/11 attacks.

"These events tested our capabilities and expanded our reach. We were no longer just an Australian company; we were a global player," Powe notes.

By Mid-2005, there was a noticeable shift in market demand.

SEA adapted by streamlining its operations and consolidating its efforts in sales, customer service, technical support, and R&D. "We learned to be agile, to anticipate market needs, and to always stay a step ahead," says Powe.

In recent years, SEA has further solidified its position as a leader in the field through ongoing research and scholarships with Australian universities focused on respiratory solutions to end-users.

The 2020s: Planning for Tomorrow's Safety Opportunities

Today, SEA's core product remains Sundström, with a growing market share in the Australian respiratory protection range across all industries and government agencies.

Powe reflects on the journey, "Our story is about resilience, innovation, and a relentless pursuit of safety. As we look ahead, our focus remains on education, quality, and serving the needs of our customers."

From its humble beginnings to becoming a leader in respiratory protection, SEA's journey is a chronicle of staff dedication, product innovation, and a commitment to making a difference in helping safeguard lives.



Safety Equipment Australia Pty Ltd



ENSURING THAT PSYCHOSOCIAL RISK MANAGEMENT MEETS LEGAL REQUIREMENTS

Psychosocial hazards are fluid, cumulative and numerous, each carrying a varied level of risk that may change over time. It can often take years before the true impact of psychosocial and cultural risks becomes apparent, and simply undertaking risk assessments and surveys does not prevent harm — nor does it meet the legal requirements of psychosocial risk management. RANJEETA SINGH, founder of EnableOrg and a health and safety auditor, takes a look at how organisations can more effectively manage psychosocial risks in the workplace.

The legal requirement to manage psychosocial hazards is not new — in fact, it has been present in health and safety legislation across countries such as the UK, Australia and New Zealand for decades. All countries draw their health and safety legislation and high-level requirements from the same source — the International Labour Organization, a part of the World Health Organization. These health and safety regulations have always incorporated both physical and mental health. However, mental health is arguably more difficult to manage and has often been ignored or overlooked as a consequence. This all changed when COVID struck, and the ailing mental health of many workers was brought to the forefront globally.

Despite this, a great deal of misinformation still surrounds the concept of psychosocial risk management. Most workplaces genuinely want to get it right, but with many profes-

sionals being misinformed themselves, it can be difficult to achieve clarity and the successful implementation of robust risk management processes.

The importance of qualifications

In most countries, the requirements for managing psychological hazards are pretty similar. Any differences usually come down to technical things, such as the size of the personal and company fines or prison sentences employers in each country may face, or which hierarchy of control is preferred. Terms used in legislation, such as ‘competent’, ‘expertise’ and ‘qualified’ are the same across the board.

However, the true test of the legal requirement to be competent/expert in the field is to be in possession of tertiary qualifications. A person cannot possibly judge ‘reasonably foreseeable’ and ‘reasonably practicable’ if they are not qualified to understand organi-

sational psychological needs and interactions, as well as how to manage risks within the requirements of health and safety legislation.

Google, LinkedIn and two-day ISO courses are not enough to achieve competency or expert status. When it comes to physical hazard management, no reputable organisation would hire anyone without the correct tertiary qualifications. Given the complex nature of psychosocial hazards, employers need to ensure they also have appropriately qualified individuals overseeing this aspect of workforce safety. In other words, an individual must possess qualifications in both health and safety risk management and organisational psychology to be fully competent for the role. Anyone implementing and conducting psychosocial risk management without these tertiary qualifications is failing to meet legal requirements, both for the organisation and for themselves as an individual. Not only that, but doing so can leave the individual/organisation vulnerable to fines and — depending on what the risk factors and fallouts are — prosecution.

How do organisations achieve compliance?

Simply undertaking risk assessments and surveys does not prevent harm, and does not meet the legal requirements of psychosocial risk management. Psychological assessments carried out by organisational psychologist consultancy firms and most software analysis only fulfil about 20% of legal requirements. The remaining 80% of compliance still comes from the subject matter expertise of risk management (a whole complex field in its

own right) combined with health and safety management and legislation requirements.

In addition, assessments need to be carried out at specific frequencies to eliminate and mitigate risk. One-off surveys, or surveys conducted at random frequencies (as will often be the case without health and safety risk management knowledge), are a waste of resources that can lead to increased risk and failed legislative requirements.

Below are the key components of psychosocial risk management for compliance:

1. Psychosocial risk identification (20% compliance). This is often survey based, and must be carried out using psychologically validated surveys. In-house, self-developed surveys will not achieve compliance, and it is important to note that psychosocial is not the same as psychological safety. Organisational psychology qualifications are needed for this component.

2. Psychosocial risk assessment (20% compliance). This involves evaluating the outcomes of the previous step. Qualified expertise is needed to interpret the findings, both psychologically as well as knowing how and what the risks mean — both individually and cumulatively. Organisational psychology and health and safety risk management qualifications are needed for this component.

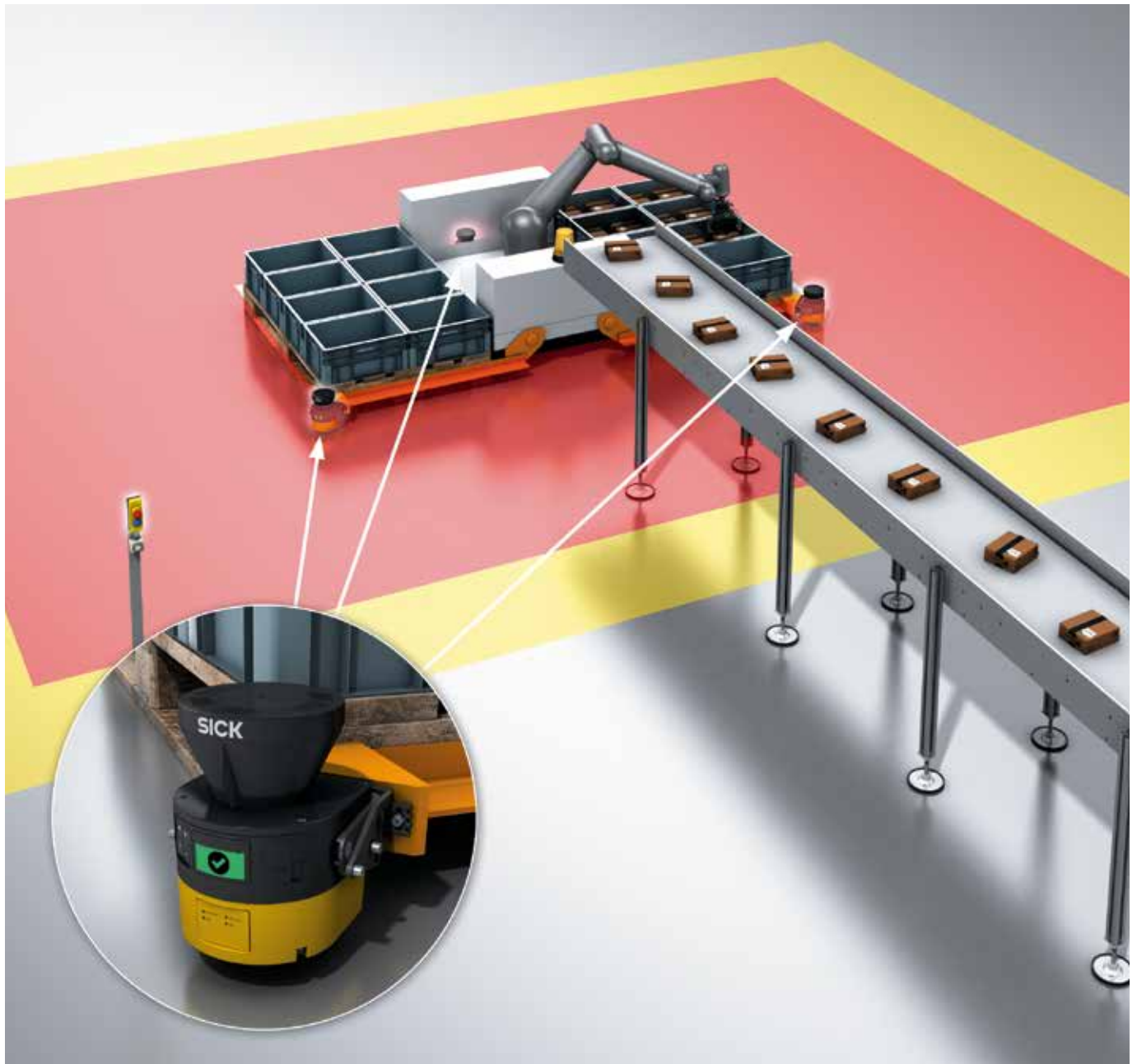
3. Psychosocial controls (20% compliance). This is critical, requiring a very robust knowledge of what controls are and how to implement controls that do not compete with BAU or other workplace factors. Organisational psychology and health and safety risk management qualifications are needed for this component.

4. Psychosocial control reviewing (20% compliance). This is critical, requiring a very robust knowledge of the frequency at which controls should be monitored, and how to implement cumulative control measures that do not compete with BAU or other workplace factors — as well as how to assess whether the right controls are in place. Organisational psychology and health and safety risk management qualifications are needed for this component.

5. Consultation (20% compliance). This does not merely mean asking people how the changes are going and encouraging them to provide their feedback. Health and safety legislation has specific stipulations as to who is responsible for what throughout the organisation, from top level to manager to frontline. They all have different legal responsibilities (with some overlap). Consultation includes incorporating these tiered and varied requirements. Health and safety legislative management qualifications are needed for this component.

istock.com/Thank you for your assistant





SAFE ROBOTICS AREA PROTECTION SOLUTIONS FROM SICK

Robots have become an indispensable part of modern industry. They make it possible to flexibly adapt to changing production conditions while keeping product quality at a consistently high level. To optimally enhance the performance of humans and to increase the productivity of plants, the robotic system should ideally be freely accessible. At the same time this must not pose any risk to the health or life of the employees.

For decades, SICK's renowned knowledge for machine safety worldwide has helped companies protect their people around machine operations effectively. These tailored complete solutions include hardware and engineering services: from planning to implementation through commissioning. The objective is to optimise the robotics applications by protecting hazardous areas in accordance with international standards.

SICK safety solutions increase productivity, enable ergonomic processes and save time and money. Safe Robotics Area Protection Solutions prevent unnecessary robot stops. An automated restart can be implemented depending on the robot application.

A solution for protecting hazardous areas around robots could, for example, consist of a combination of safety controller, safety laser scanner, and a suitably configured safety function block.

How it works

The safety laser scanner employed for robot protection uses two different field sets: one as a warning field (yellow), and one as a protective field (red). As soon as a person enters the warning field, the speed of the robot is reduced, and a dynamic adjustment of the protective field occurs. If the person enters the

smaller protective field, the robot stops completely. On leaving the hazardous area, the robot will automatically restart, initially at a reduced speed then returns to its full operating speed as soon as the person has exited both the protective field and warning field.

This automated setting increases productivity, as downtimes are reduced and workflows optimised. The robot's two-stage speed adjustment function also extends its service life.

SICK offers a variety of different solutions for protecting the hazardous area of freely accessible robotics applications. SICK can also develop, in conjunction with the customer, customised solution concepts that are tailored to the requirements of the specific robotic application.

If, for example, very little space is available, the safety experts from SICK can assist with the design of a compact and integrated solution. In this case a combination of S300 Mini Standard safety laser scanner, deTec4 Core safety light curtain, and Flexi Classic safety controller, can allow free access of the worker to the robot while minimising the safety distance to the hazardous movement.

As soon as the worker interrupts the light beams of the safety light curtain, the robot stops. The safety laser scanner in turn detects when the worker exits the hazardous area again and initiates an automated restart of the robot.

Where do I start?

The implementation of a tailored robotics solution begins with a comprehensive analysis of the actual application. The responses to the following questions provide an initial basis for understanding and correctly designing the robotics application.

- What cycle time is required for the process in this application?
- What speed is required for the robot?
- What operating modes are required for the application?
- How often does the operator need to intervene in the application?
- What hazards exist due to the movement of the robot and the processes being performed?
- Are there any space restrictions?
- What are the requirements on the range of motion and load capacity of the robot?

What are the Functional Safety Services SICK is providing?

- **Machine safeguarding evaluation** This service can identify electrical and mechanical hazards then run risk assessment of the identified hazards; it is also designed to provide evaluation of existing protective measures you have already put in place and offer recommendations of new or improvements of those measures.



- **Risk assessment** SICK safety experts perform or introduce risk assessment on your request. Determine applicable directive and standards to follow, identify hazards, and conduct risk evaluation to provide specification of safety requirements according to the local standards.
- **Safety concept** Provide specification of safety functions and required safety level (PLr or SILr); Provide recommendation for technical implementation of safety functions in the form of a block diagram as well as define parameters for the selection of protective devices.
- **Safety hardware design** Create a SISTEMA project file and select suitable components, specify measures for controlling and avoiding systematic errors, and determine the safety level required.

SICK
Sensor Intelligence.

SICK Pty Ltd
www.sick.com.au



Safety earmuffs

Pro Choice Unisex Python Earmuffs Class 5 -31Db – Grey are now stocked at Totally Workwear as part of its relaunch, which focused on trade, safety and uniforms.

The Pro Choice Earmuffs provide durability for maximum protection, helping to keep workers safe from excess noise. They offer hearing protection for noise levels to 116 dB(A). The earmuffs also provide a contemporary design, giving workers a good level of comfort and style on the jobsite.

The design of the ear cup is solid and lightweight, whilst the padded foam headband helps to minimise pressure on the head. The earmuffs also feature a steel wire, enabling them to withstand demanding use on a worksite, whilst the low clamping force increases the worker's comfort.

Totally Workwear

www.totallyworkwear.com.au

Supplied air respirator

The G1 Facepiece supplied air respirator (SCBA) from MSA Australia is designed to provide enhanced comfort and fit, due to a broad sealing line. The respirator features an optimised balance point to facilitate greater freedom for head movement and a low profile for less snagging and improved weight distribution. It also provides low inhalation and exhalation resistance.

The respirator features a wide distortion-free field of vision, while its flat lens design prevents optical refraction and reflections. Its optimised airflow continuously flushes the lens to avoid fogging and reduces breathing resistance.

The innovative material composition of the mask provides increased chemical resistance and protection against permeation. The G1 Facepiece is easy to assemble and clean, with an IP67 resistant C1 headset. The positioning of the speech diaphragm is also designed to facilitate high quality voice transmission. The respirator is also future ready for integrating with the planned complete suite of communication solutions including wireless and team talk.

MSA Australia Pty Ltd
au.msasafety.com/



Pedestrian detection safety and warning system

The Bodyguard pedestrian safety warning system is designed to detect workers on foot who come too close to moving equipment. It helps to maintain a safe distance, thereby preventing collisions and enhancing workplace safety.

Advanced sensors detect presence of pedestrians within a programmable radius prompting immediate action to prevent collision. Both the forklift operator and pedestrian receive clear and unmistakable alerts (driver gets flashing light and human voice "Look out! Person near you", pedestrian tag vibrates).

Pedestrians can wear small lightweight 'Tags' that become part of PPE to alert when close to moving equipment. The pedestrian safety warning system also features 360-degree cover, to detect pedestrians through most solid objects, around corners and within blind spots. The system does not require line of sight that other systems like AI cameras do.

The pedestrian safety warning system can be integrated into a range of workplace environments and magnetically attaches quickly to vehicles. The system only alerts when a Tag is detected within the exclusion zone, to prevent false alarms.

The Tags are easily worn on a lanyard, in pockets or attached to hard hats. The system only kicks in when a pedestrian is detected, therefore not interfering with normal workflow. No ongoing maintenance is required.

The pedestrian safety warning system is also RCMA Australian EMC and RF certified compliance.

BodyGuard Safety Solutions

www.bodyguardsafety.com.au

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I want to know
immediately. I don't
want someone's family
telling me they didn't
come home. ”**

Mike | Conservation, Parks & Wildlife Lead

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Guardian Angel Safety understands the immense responsibility that Health and Safety professionals carry in ensuring that lone and remote workers return home safely every day. We are proud to be protecting thousands of Australian workers everyday.



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GUARDIAN ANGEL SAFETY
Safety when it matters most



Leather safety boots

Providing good protection and support, the DeWalt APEX Pro Comfort Extreme Duty Leather Work Boot offers precision and movement control.

The footwear has an outsole with the highest rated slip resistance (C rating) and 300°C high heat resistance, as well as D-ring upper eyelets and lace loops that deliver a firm fit and increased mobility.

Designed to meet key work safety needs, the impact- and abrasion-resistant toecap bumper of the APEX enhances full toe protection, while the heavy-duty YKK medial side zipper provides hassle-free work boot fastening and removal.

Stanley Black & Decker Inc
www.stanleyblackanddecker.com

Containment work area

Designed for isolating hazardous materials, the HAZMAX Containment Work Area is engineered to isolate applications including large equipment distillation procedures, pilot plant requirements and sampling/weighing/dispensing operations.

The variflow baffle system and bypass inlets provide protection from hazardous fumes, to safely vent vapours, odours and powders for maximum work safety. The ventilated work area is constructed of corrosion-resistant composite resin surface panels. Tempered glass horizontal sliding door panels provide convenient access to the work area. Vapour-proof or explosion-proof lighting is provided.

A secondary containment basin, constructed of composite polyresin, has coved corners and a sloped bottom to facilitate draining and cleaning of any accidental spillage. A raised fiberglass grate deck floor allows spillage to flow through. Specific requirements can be met through a variety of safety and service accessories, also available from HEMCO.

HEMCO Corporation
www.hemcocorp.com



Mass flow meter

Emerson has introduced the Micro Motion G-Series Coriolis Flow and Density Meters, designed to provide direct mass flow measurement, immunity of process temperature/pressure changes and advanced process and health diagnostics.

The flow meter is suitable for chemical plants that need to improve safety, reduce energy use and minimise emissions. They are available with Pressure Equipment Directive (PED), Safety Integrity Level SIL 2 and SIL3 certification, and are designed to meet NAMUR NE 132 guidelines. Hygienic models will also be available in the first half of 2024 for food and beverage, life sciences and other applications where 3-A or European Hygienic Engineering & Design Group (EHEDG) certification is required.

The mass flow meters feature a face-to-face dimension of less than 12" for the 1" line size model. The compact form factor is complemented by a reduction in weight, providing benefits for transportation, installation and safety.

Connection to host systems is available via a combination of discrete and 4–20 mA HART signals, or via digital connections, including Wi-Fi, Bluetooth technology and power over Ethernet (PoE) solutions, including Ethernet/IP, Modbus TCP or PROFINET. Each of these digital connections enables two-way communication of a variety of data, including process variables, diagnostics, status, configuration and calibration. This data can be used to implement proactive maintenance practices and digital transformation initiatives.

Six line sizes are available from ¼" to 3", and product selection is provided via simplified and streamlined configuration. Direct laser-etch tagging provides durability in harsh conditions, and it eliminates the need for adhesive labels and spot-welded tags.

Emerson Automation Solutions
www.emerson.com/au/automation

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21-Gauge
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GFPR452 Graphex® Beyond

EN 388



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Australian Standard
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AS/NZS 2161.3:2020
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Half face mask

The Sundström SR100 is a half face negative pressure respirator moulded in one silicone piece. This low allergenic respirator comes in three sizes (S/M #100-03218, M/L #100-03217 and L/XL #100-05856) and, together with its adjustable head-harness, provides a facial seal fit to suit different face shapes. When used alongside the Sundström SR510 P3 particle filter or particle/class 1 or particle/class 2 gas filters, it can also be connected to a compressed-air attachment.

The half face mask is suitable for heavy-duty use and full-time exposure. The twin silicone exhalation valves assist in achieving low breathing resistance, making respirator wear more comfortable for long-term use. The valve covers with partitions protect the exhalation membrane against dust and paint mist.

Always read the user instructions before use and the maintenance schedule. When selecting a respirator and filters, the type of pollutant, concentrations, work intensity and protection requirements must be considered. A risk assessment should also be carried out and the use of a respirator must be part of a respiratory protection program to achieve maximum respiratory protection.

Safety Equipment Australia Pty Ltd

www.sea.com.au



Thermal fluid analysis and light ends removal kits

The Global Heat Transfer thermal fluid analysis kit and light ends removal kit (LERK) are designed to help manufacturers and other businesses operating heat transfer fluid (HTF) systems to better understand the condition of thermal fluid, and improve workplace safety.

The thermal fluid analysis kit comes with equipment for drawing a fluid sample, containers to store it in, expert advice and instructions, and a fluid analysis service. It allows users in remote and offshore locations to accurately determine fluid condition without waiting for an external engineer visit. This enables plant managers to avoid unplanned downtime and proactively manage the health and safety risks associated with heat transfer systems.

The light ends removal kit can be retrofitted to any thermal fluid heat transfer system so that users in food and beverage, industrial, chemical, pharmaceutical, wood and plastics processing can remove volatile light ends and improve system, site and personnel safety. The LERK can be equipped with remote monitoring capabilities to enable a centralised solution that reduces the costs associated with call-outs.

Global Heat Transfer

globalhtf.com

Hearing protection headsets

Savox Communications has launched an addition to its Noise-Com (NC) 500 series — the Savox NC-520XP hearing protection headsets. Designed to meet the needs of professionals working in demanding environments, the hearing protection headset combines safety and innovation.

In noisy work environments, protecting one's hearing is paramount, but it should never come at the cost of situational awareness and effective communication. The Savox NC-520XP offers a range of features that cater to a variety of work settings.

The hearing protection headsets incorporate Savox Dual Bluetooth, thereby enabling users to connect two Bluetooth devices simultaneously — in most cases a radio and a mobile phone — and facilitating hands-free communication. Users are able to listen to radio transmissions and still be reachable. The noise-cancelling push-to-talk (PTT) boom microphone provides crystal-clear speech even in loud environments. The headsets also feature a user-friendly answer button and rotary switch for convenient control of ambient sound volume and incoming communication. With a rechargeable power unit designed for durability, the headsets are designed to facilitate onsite safety.

The hearing protection headsets feature a unique casting technique to protect electronics and a voice-prompted menu that provides a user-friendly interface for ease of navigation. The headset also comes with a low battery warning and automatic switch-off.

The Savox NC-520XP hearing protection headsets empower professionals to work safely and efficiently, while providing protection for their hearing.

Savox Communications

www.savox.com



TOP TIPS

CHOOSING LED STRIP LIGHTS THAT MITIGATE UNDERGROUND ELECTRICAL RISKS

The significance of electrical safety in underground settings, such as mining and tunnelling, cannot be overstated. These confined spaces demand lighting solutions that offer efficient lighting and — more importantly — are safe to use within specific environments.

LED strip lights have emerged as a popular choice, due to their adaptability and energy efficiency. However, most LED strip lights are not suitable for hazardous conditions.

MineGlow, an expert in hazardous area LED strip lights, shares five crucial insights to mitigate electrical risks and uphold safety standards when opting for LED strip lights in underground environments.

1. Opt for purpose-built lights

Not all LED strip lights are created equal. It is important to select the appropriate industrial-grade LED strip lights developed and approved for the specific environment in question. There are many variations in product quality and design and a wide range of specifications to meet the electrical certification requirements for different operating zones in mining and tunnelling.

Purpose-built LED strip lights undergo specialised engineering to withstand the harsh conditions and are built to endure vibrations, extreme temperatures, shock and impact. Considerations such as component quality, water and dust resistance, fire retardance, impact resistance, tensile strength, explosion protection and warranty are crucial when selecting LED strip lights.

2. Certifications matter

The nature of underground environments exposes lighting systems to hazardous elements like vapours, gases, extreme temperature and damage, creating severe electrical safety issues if incorrect LED strip lighting is used.

LED strip lights for mining and tunnelling must undergo rigorous testing, ensuring compliance with safety regulations and minimising the risk of electrical hazards.

Check the certifications to ensure the LED strip lights selected are correctly certified to perform in harsh and hazardous conditions. Look for LED strip lights that have been independently tested and meet the highest local and international safety standards.

3. Check the IP ratings

Ingress Protection (IP) ratings play a pivotal role in safeguarding LED strip lights against the environmental elements prevalent in hazardous

environments. Dust and moisture will compromise the safety and functionality of lighting systems, leading to potential electrical faults or short circuits.

Ensuring the LED strip lights have the right IP rating for the operating environment significantly contributes to electrical safety, with higher ratings indicating increased resistance to dust and moisture.

4. Choose low-voltage options

When operating in hazardous environments, opt for low-voltage LED strip lights. These lights consume less power and operate at lower voltage levels, reducing the risk of electrical faults, shocks and short circuits. This reduction in voltage levels creates a safer working environment, particularly in spaces where hazardous gases or flammable materials are present.

Low-voltage LED strip lights are versatile and generally suitable for various applications within hazardous environments. Whether in mining tunnels, confined spaces or areas with specific safety requirements, these lights can be tailored to meet diverse lighting needs without compromising safety.

5. Prioritise component quality

The quality and reliability of components significantly impact the performance and safety of LED strip lights. Choosing lights made with high-quality, durable materials is crucial to ensure they operate reliably within harsh and hazardous environments.

Assessing the reliability of LED chips, circuit boards and especially the encapsulating materials, like silicon and PVC, assists with prolonged and safe operation. Understanding the construction and materials used in LED strip lights is key to ensuring resilience against environmental factors, enhancing overall electrical safety, and reducing the chance of failure and high maintenance costs.

Following these proactive measures will minimise potential electrical hazards, vastly reduce maintenance downtime and create a safer working environment. Ultimately, a well-illuminated work area using reliable 'fit for purpose' lighting leads to improved safety and productivity for all involved.



LI-ION BATTERY FIRE HAZARDS: REDUCING THE RISK

Lithium-ion (Li-ion) batteries are commonplace in most businesses and are often used in products such as power tools, vehicles and energy storage systems.

However, despite their common use, Li-ion batteries pose significant safety risks. This is due to the presence of a flammable and volatile liquid electrolyte solution. In fact, more than 450 fires across Australia have been linked to Li-ion.¹

Li-ion battery hazards are varied and can lead to severe injury or death. Often, these hazards can arise from low-quality batteries, unsafe charging practices, environmental or external factors — such as when Li-ion batteries are exposed to heat or moisture, or when products containing Li-ion batteries are repurposed or modified.² Risks include incidents such as explosions and fires that are difficult to extinguish and that could spontaneously reignite.

Understanding and implementing safety measures is essential to mitigate these risks. Here, fire protection company Wormald outlines five steps organisations can take to keep their workers safe from Li-ion-related fire hazards.

1. Proper storage and management

The storage environment of Li-ion batteries greatly influences their safety and longevity.

Optimal storage temperature ranges from 5–20°C, as excessive heat can shorten battery life and escalate fire risks, while cold conditions affect device efficiency and can require more frequent charging.

2. Avoid overcharging

Overcharging can cause unstable conditions within Li-ion batteries, leading to thermal runaway. This involves an uncontrollable increase in temperature, which presents a significant fire hazard. To prevent overcharging-related risks, users should limit charging time, avoid leaving devices to charge overnight and maintain battery charge levels between 50 and 100%.

3. Handle batteries with care

A punctured battery can lead to short-circuits and electrolyte leakage, which can trigger chemical reactions that generate heat, damaging the battery and surrounding areas. Proper handling ensures the safety of the user and extends the battery's lifespan. Users should also take care to dispose of Li-ion batteries correctly to avoid creating additional risks.

4. Don't overlook cleanliness

Li-ion batteries attract dust and grime, which can be a fire hazard. Regular cleaning is essential, especially around vents and ports. A simple cloth can be used to clean these

areas for mobile devices, optimising battery performance and reducing fire risks.

5. Purchase from reputable suppliers

It's crucial that users buy batteries from reputable manufacturers. The market is flooded with counterfeit products that appear genuine but may be made with inferior materials and lack adherence to safety standards, which can lead to short circuits or power surges. Users should check credentials and compliance with safety standards, such as those outlined in the Australian Government's Electrical Equipment Safety Scheme (EESS).

While it is possible to reduce the risk of fire and hazards from using Li-ion batteries, understanding how to correctly respond in the event of an incident is essential to help keep homes and businesses safe. In the event of ignition, the immediate action is to cut off the current supply, ideally by flooding it with water. However, the flammable nature of Li-ion batteries often means that the safest response is to evacuate the area and seek professional help.

1. <https://www.unsw.edu.au/newsroom/news/2023/03/seven-things-you-need-to-know-about-lithium-ion-battery-safety>
2. <https://www.accc.gov.au/about-us/publications/lithium-ion-batteries-and-consumer-product-safety>



Comfort support insoles

Workers who wear safety footwear — colloquially known as 'steel caps' — have foot pain rates far higher than the general population. Every foot is different and the uvex tuneup 2.0 foot-type specific insoles have been designed based on the anatomical rotational equilibrium of the foot for added comfort and support.

The three biomechanically functional relevant insole variations for low, neutral and high arch feet provide support where each foot type needs it. Increased support and redistribution of pressure customises the fit to help improve comfort during a full day at work. uvex multiple fit system also allows customisation of width and forefoot cushioning. As insoles are a certified part of safety footwear, the uvex tuneup 2.0 insoles are certified to be worn in the uvex x-flow range which is also biomechanically designed to work with the body.

Using scientific algorithms, the uvex fit advisor app utilises three calibrated images of the foot to recommend a uvex tuneup 2.0 insole specific to the wearer's foot type. The uvex fit advisor app also recommends the correct footwear size and width. uvex fit advisor app can be used in-store, onsite or at home using a calibration plate, or A4 or A3 piece of paper.

UVEX SAFETY AUSTRALIA LIMITED PARTNERSHIP

www.uvex-safety.com.au

► Pilz launches a complete IO-Link Safety System with Master and Sensors



First PILZ devices with IO-Link Safety:

- ✓ Safety light curtains **PSENopt II advanced IOLS**
- ✓ Control unit **PITgatebox IOLS**
- ✓ IO-Link Safety Master **PDP67 IOLS**

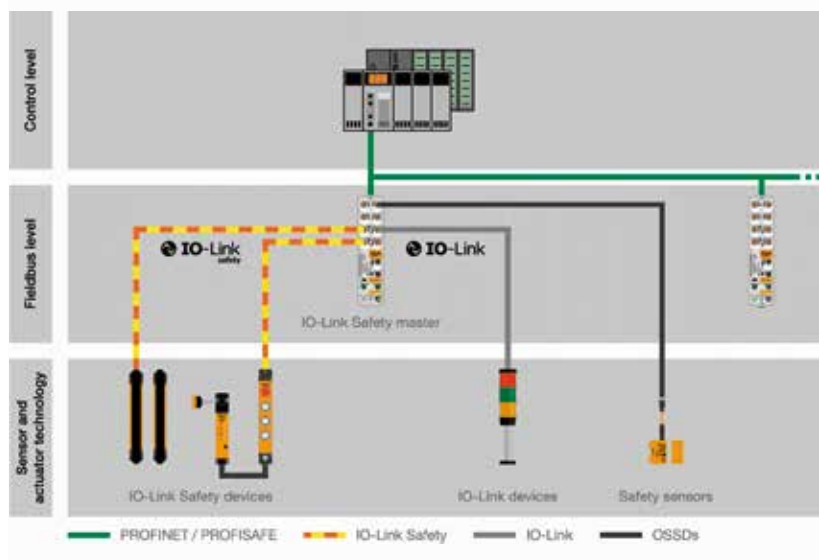
As the interface to the safety controller, the IO-Link Safety Master enables bidirectional communication up to field level as the interface to the safety controller.

IO-Link sensors, actuators as well as classic safety sensors can also be connected. The IO-Link Safety sensors supply important status information and offer more options in the field of intelligent diagnostics.

The devices can be identified and parameterised automatically, which makes them easier to swap and reduces downtimes.



www.pilz.com.AU
 ☎ 1300 723 334
 ✉ sales@pilz.com.au





Filter housing system

The Camfil CamSafe filter housing system is designed for use wherever containment and operator safety are essential.

CamSafe is a modular and flexible product family, designed for exhaust of contaminated air in containment applications like biosafety L1 to L3+, safety laboratories, hospitals, pharmaceutical and chemical industries, animal facilities. Housings are available as single modules or multimodule systems depending on required filtration stages and air volume.

The housing can be fitted with a wide range of particulate or molecular filters. Clamping with a single action lever is patented and includes a double safety feature to provide secure filter positioning and gasket compression. A service bag collar for contamination-free BIBO filter change helps enable safe change of every individual filter.

CamSafe has been tested at ± 6000 Pa to the following qualification levels: mechanical resistance — Class D1 - EN 1886:2003; local and global leakage — Class C - EUROVENT 2/2, Class L1 - EN 1886, Class 3 - ISO 10648, Class D - EN 12237.

The system is designed for reliable and efficient filter testing with qualified leak detection capability, using lower aerosol quantities. Other configurations of the CamSafe range can be adapted to specific needs, from additional features and functions to specific finishes, custom formats and bespoke integration.

Camfil Australia Pty Ltd
www.camfil.com.au

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THE EVOLUTION OF HEAVY VEHICLE SAFETY IN AUSTRALIA



Great improvements have been made in recent times when it comes to the comfort and efficiency of heavy vehicles across the transport industry. But by far, some of the greatest advancements have been made in improvements to safety technology for both vehicle occupants and other road users, writes SIMON HUMPHRIES, Product Manager, Medium-Duty & Heavy-Duty/Chief Engineer at Isuzu Australia.

Australia's road transport industry is under great pressure to support a growing population — from the on-road logistics of moving products and produce across the country to truck-reliant businesses that work in all manner of applications.

Not only that, but operators have a unique combination of factors and challenges to tackle, encompassing operating conditions, climate and the roads themselves. This is, of course, across the vast Australian landscape that covers more kilometres and a much greater range of road conditions compared to most other countries on the planet. >



With this in mind, government regulatory bodies stipulate a range of safety requirements under Australian Design Rules, more commonly referred to as ADRs. ADRs are applied to trucks manufactured overseas, but some companies take further steps by conducting their own safety testing programs within Australia. This helps to ensure that safety requirements are met within unique local conditions.

Active versus passive safety

Vehicle safety can be seen in two broader forms — active and passive safety.

In past years, passive safety features were a key focus, namely the development of components such as seatbelts and airbags, as well as improving the overall construction of cabins and running gear to protect occupants.

However, since the late 1990s, many original equipment manufacturers (OEMs) have placed a much greater emphasis — and expended more resources — on conducting extensive research and to improve 'active' safety features. The idea behind this is to prevent incidents from happening in the first place.

This is of particular importance in the development of heavy vehicles, where even low-speed accidents can have catastrophic consequences — not only to the driver and passengers, but other users on the road.

Even in recent times and with improved safety measures in place, heavy trucks and buses have been involved in high-profile crashes that have ended with fatalities. The tragic event that unfolded in the Hunter Valley recently springs to mind.

The commercial heavy vehicle industry therefore has an obligation to take truck safety seriously, and it is very important to apply local knowledge and engineering rigour to help refine the safety technology on the trucks that are sold here in the Australian market.



IT IS VERY IMPORTANT TO APPLY LOCAL KNOWLEDGE AND ENGINEERING RIGOUR TO HELP REFINE THE SAFETY TECHNOLOGY ON THE TRUCKS THAT ARE SOLD HERE IN THE AUSTRALIAN MARKET.

Electronic stability control testing: an Isuzu case study

Isuzu Australia recently conducted a rigorous round of ESC testing and calibration exercises in conjunction with Knorr-Bremse Australia.

This was undertaken at the DECA (Wodonga TAFE) testing and training facility in Shepparton, Central Victoria. The test involved a medium-duty Isuzu FTR 150-260, fitted with a test body customised for Knorr-Bremse.

The test body featured flexible loading racks and extended outrigger wheels attached to the body sub-frame, to enable a safe testing environment and assist with development of a new calibration for the EBS-5 control unit.

This control unit is factory-fitted to Australian-market MY22 Isuzu FTR 150-260 models and all MY22 FV models in the range. The FTR model involved in the testing had an extended wheelbase of 7.2 metres, which is a dimension beyond that available from the factory in Japan. This is also the longest possible wheelbase that enables a vehicle to remain within the ADR turning circle limit of 25 metres.

To determine the new calibration, the truck was put through a series of specific manoeuvres within the controlled environment of the DECA facility. Specialised Knorr-Bremse equipment on board the truck recorded and sent data back to the team throughout the manoeuvres.

The types of manoeuvres undertaken by the test truck were tailored to the way in which trucks are deployed within Australian industries and applications. This helped to simulate what a possible rollover situation would look like on the bitumen, being operated by an Australian driver in Australian conditions.

The ESC system being tested and calibrated would then intervene automatically for the test driver and help to prevent those incidences of rollover or loss of directional control. The system works by firstly removing the throttle from the driver's control and then automatically applying appropriate braking to individual wheels to slow the truck down to a safe speed.

The data collected throughout the testing was critically analysed and fed back into the programming of the EBS-5 control unit. The use of outriggers during this testing phase prevented any rollovers and determined the exact point at which it would happen on the test truck.

Further extensive on-road testing was then carried out to ensure that calibrations were correct and the systems were working as they should in an everyday situation.

IoT fall detection solution protects lone workers



Wearin', a startup of the Swiss-headquartered Conexivity Group, has developed an IoT solution that connects lone workers with the control centre in the event of an accident. The product was commissioned by Geneva-based concrete producer PRO BETON, in order to ensure the safety of its machine operators and cleaners working on production sites on days, nights and weekends.

Based on IoT technology and powered by AI, the Wearin' solution comprises two platforms, one physical and the other digital, communicating with each other in real time. A device attached to the worker's vest, called the Wearin' Brain, embeds three safety alert and detection systems: one to alert the control centre via the Wearin' SOS button that can be activated manually in the event of an accident; an inertial sensor that can automatically detect a fall (in case the alert cannot be raised manually); and GPS to pinpoint the precise location of the worker. Data and alerts are sent and collected via the cloud to the Wearin' dashboard integrated into the central monitoring system, allowing the control centre to take appropriate emergency and rescue measures according to the alerts they have received.

"The reliability of the solution, in particular its advanced automatic fall detection system, makes the difference in securing lone working time and meeting the comfort and safety needs of our employees," said Éric Guillot, Director of PRO BETON. "As they work alone in a noisy, high-risk environment, it's crucial for them to be able to rely on cutting-edge technology that incorporates all the necessary safety features so that the safety control centre can intervene in a timely and appropriate manner in the event of an accident."

As its name suggests, the Wearin' Brain attached to the worker's vest is the brain of the hardware and software systems in the IoT

solution. Alvaro Goncalves, Technical Director at Wearin', explained, "The Brain contains the SOS button, the fall detection sensor, the GPS system, a 10-hour battery enabling it to last an entire shift of PRO BETON employees without additional charging, as well as the LTE module for secure data transmission to the alarm centre."

The fall detection sensor designed by Wearin' has been designed to minimise the risk of false positives that might be experienced with other products. Aurélie Balsa, Embedded Software Manager at Wearin', explained, "The detection provided by other products less advanced than ours is sometimes so unreliable that users, annoyed by repeated false alarms, end up disconnecting the system altogether. Wearin's solution comprises hardware, firmware and embedded algorithms. Based on data from our accelerometer and gyroscope, our algorithms reduce false positives to less than 1%, to the great satisfaction of users, who find it all the easier to adhere to this security system."

Jonathan Brossard, CEO of Conexivity Group, said the IoT platform meets the needs of the lone worker market.

"The trend we're seeing in this sector is a strong and genuine concern on the part of companies for the health and safety of their employees. These companies no longer want to limit themselves to ticking the boxes on safety checklists provided by regulatory authorities. They demand real solutions to the real-life issues specific to their operations," he said.

"In this respect, Wearin' provides an end-to-end connectivity solution that is not only ultra-reliable, but also modular and scalable, capable of adapting to the specific security typologies and requirements of each client organisation."

HOW TO SAFELY UPGRADE ELECTRICAL SYSTEMS IN ASBESTOS- PRONE BUILDINGS



Asbestos, a naturally occurring mineral, was historically favoured in building materials for its fire resistance and insulating properties. This included its use in electrical insulation, where its ability to resist heat and corrosion made it an ideal component in electrical panels, wiring and other equipment. However, writes SEBASTIAN TILLER, General Manager at Octfolio, this widespread use has led to significant health concerns – particularly for professionals like electricians who may encounter these materials in older buildings.

Asbestos is a critical concern during electrical upgrades in older buildings, because disturbing asbestos-containing materials (ACMs) can release harmful fibres into the air. When inhaled, these fibres can lead to asbestosis, lung cancer and mesothelioma.

Identifying asbestos risks

Identifying potential ACMs in older buildings is a crucial step before any electrical upgrade.

ACMs can be found in various components like insulation, tiles and wiring conduits. Electricians should look for telltale signs such as ageing materials, distinct textures, or labelling that indicates the presence of asbestos. Knowledge of building construction

periods can also aid in identifying areas where asbestos was commonly used.

Conducting professional asbestos testing is paramount before initiating any electrical work in older buildings. These surveys, performed by certified asbestos inspectors, accurately identify and assess the presence and condition of ACMs.

This is essential not only for planning safe electrical upgrades, but also for ensuring compliance with health and safety regulations – thereby protecting workers and building occupants from asbestos exposure.

Legal and safety regulations

Legal requirements and safety standards for working in asbestos-prone environments

are stringent and are designed to protect workers and the public from the dangers of asbestos exposure.

These regulations typically include mandatory asbestos surveys, strict guidelines on handling and disposing of ACMs, and ensuring that workers have the proper training and equipment. Non-compliance can lead to significant legal penalties, making adherence crucial for any electrical upgrade project.

Contractors and building owners have significant responsibilities in ensuring compliance with asbestos-related safety regulations.

Contractors must adhere to safe work practices, use appropriate personal protective equipment, and ensure that their workers are adequately trained in asbestos awareness and



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handling. Building owners are responsible for providing accurate information about the presence of asbestos and ensuring that any work done on their property complies with legal safety standards.

Planning and precautions for electrical upgrades

When planning electrical upgrades in buildings with potential asbestos-containing materials, a meticulous approach is essential to minimise health risks. Here's a step-by-step guide, including necessary safety measures:

- **Initial assessment:** Conduct a thorough assessment of the building to identify areas where asbestos might be present.
- **Upgrade planning:** Design the electrical upgrade to minimise interference with asbestos-containing areas. If interaction with these areas is unavoidable, incorporate strategies for safe asbestos handling and containment.
- **Containment strategies:** If disturbing asbestos is unavoidable, establish a sealed

work area to prevent fibre dispersion. This involves using barriers and negative air pressure systems to contain the fibres.

- **Safe clean-up procedures:** Utilise specialised vacuum cleaners with HEPA filters for clean-up. This ensures that any asbestos fibres released during the work are safely captured and removed.
- **Proper ventilation:** Ensure proper ventilation in work areas, but avoid spreading asbestos fibres to other parts of the building.
- **Worker training:** Train all workers in recognising asbestos-containing materials and in procedures to follow if these materials are inadvertently disturbed.

Following these steps can significantly reduce the risk of asbestos exposure during electrical upgrades, ensuring a safer work environment for everyone involved.

Handling asbestos during electrical work

When asbestos is disturbed during electrical upgrades, specific procedures must be followed to manage it safely.

Firstly, work should be stopped immediately, and the area should be isolated to prevent further contamination. Then, specialised asbestos removal professionals should be consulted to safely remove and dispose of the contaminated materials.

During this process, the use of HEPA filter-equipped vacuums and wet cleaning methods can help in minimising airborne asbestos fibres.

In the event of unexpected asbestos exposure, immediate emergency response steps are crucial. This includes evacuating the area, sealing it off to prevent further contamination, and notifying asbestos management professionals.

Affected workers should undergo medical evaluation and decontamination, including changing out of contaminated clothing and showering, to prevent the further spread of asbestos fibres.

Use of personal protective equipment

The use of appropriate personal protective equipment (PPE) is essential for electrical work in asbestos-prone areas. This includes respirators with HEPA filters, disposable coveralls, gloves and protective footwear.

Respirators are particularly important to prevent inhalation of asbestos fibres, and all

PPE should be certified for asbestos work to ensure maximum protection.

Best practices for using PPE involve ensuring a proper fit — especially for respirators — and wearing it at all times in contaminated areas. Maintenance of PPE includes regular checks for damage or wear and tear, and proper cleaning as per safety guidelines.

After use, PPE should be disposed of as hazardous waste according to local regulations, to prevent contamination and potential asbestos exposure to others.

Post-upgrade asbestos management

After completing electrical upgrades in areas with asbestos exposure, specific procedures must be followed for waste disposal and site decontamination:

All asbestos waste, including used PPE and contaminated materials, should be securely bagged, labelled as hazardous, and disposed of at designated facilities.

Site decontamination involves thorough cleaning with HEPA-filtered vacuums and wet wiping methods to remove any residual asbestos fibres, ensuring the area is safe for future use.

Post-upgrade inspections, done by certified asbestos professionals, test the air and surfaces to verify that asbestos levels are within safe limits.

Clearance certifications provide documented assurance that the area is safe for occupancy, complying with legal and safety requirements.

Awareness and training

Adequate training in asbestos awareness should cover the identification of asbestos-containing materials, understanding the risks of asbestos exposure, and learning proper safety protocols for handling and disposal.

Such training is a legal requirement in many jurisdictions and a crucial factor in safeguarding the health of workers and building occupants.

Safely upgrading electrical systems in asbestos-prone buildings requires a comprehensive approach — from initial assessments to post-upgrade decontamination and training, each step is crucial in mitigating the risks associated with asbestos exposure. These guidelines help electricians and contractors ensure the safety and wellbeing of all involved while maintaining compliance with health and safety regulations.

Workplace operations platform

SafetyCulture has updated its iAuditor workplace operations platform with a range of additional features.

The updated version of the platform includes a training feature, offering an easier way to onboard, instruct and upskill teams. This feature digitises work instructions and equipment manuals and helps create training on the go.

The SafetyCulture platform also now offers a versatile digital record-keeping tool for physical assets, where users can perform inspections and log issues against specific assets. It provides an up-to-date audit trail and access to vital data, like vehicle telematics via QR code. In addition, the platform enables users to monitor a variety of sensors and telematics.

The Heads Up function helps leaders communicate critical team updates via video. It also records acknowledgement of this information from teams. Meanwhile, the Marketplace function assists workers to order workplace gear and equipment with a single click. This feature has been designed to simplify procurement, free up valuable time and become a one-stop shop. 70,000 products from 120 brands are now available to customers in Australia.

These features are all integrated and available for workers on the one platform. As a single system, it removes the need for workers to toggle multiple systems, use different apps and navigate paper-based procedures.

The updated platform also assists teams in transforming everyday tasks. It can digitise paper-based forms from a photo and harnesses AI to help users create custom training, lessons and inspection templates from their phone within minutes. The platform can suggest opportunities for improvement and recommend actions to users based on best practices and the insights gathered from flagged items during a regular inspection.

Safety Culture

www.safetyculture.com



Liquid-resistant safety gloves

The development of the Graphex Precision LQR (liquid-resistant) gloves was prompted by a demand within the plumbing, mining and construction industries for a glove that provides an effective liquid barrier while maintaining optimal grip and dexterity. The Graphex Precision LQR becomes a comprehensive solution, providing good protection and performance from a mechanical perspective, providing a liquid barrier protection for such industries.

These gloves are constructed using an impermeable flat nitrile dip coating that creates a barrier to keep hands dry during wet handling tasks. The 18-gauge Cut Level D Graphex yarn offers function and dexterity for all tasks requiring precision and cut protection, from handling oily screws to large wet sheets of glass.

The entire Graphex range is certified by the BSI Group, with independent and regular third-party audits. This improves the accuracy of mechanical score claims and offers good performance in the industry.

Private Brands Pty Ltd

www.privatebrands.com.au



Hazardous areas LED strip lighting

The MineGlow x-Glo 48 V LED strip lighting is designed for hazardous areas in tunnel construction.

The range has a single run length of up to 400 m between power feeds. As a result, less electrical infrastructure is needed for installation, reducing the frequency of power connections.

Patented Twinflex technology enhances the mechanical performance of the LED strip lights. According to the company, the lights can be expected to operate 24/7 without failure for at least five years, regardless of the tunnel type and environmental conditions.

The tunnel range is also equipped with IP67-rated C-Mask technology that helps the lighting strip to repel dirt, corrosion and decay, even when not cleaned regularly. The lighting strip is therefore able to withstand harsh conditions and operating temperatures.

The 48 V tunnel range is available in a range of lumen outputs, including 200, 500, 810 and 1080 lm, providing flexibility for various tunnel lighting needs.

Mineglow

www.mineglow.com.au

UNDERSTANDING SIL RATINGS AND WHY IT MATTERS



Insufficient and poorly designed safety systems have been the cause of major industrial accidents all around the world. Safety Integrity Level (SIL) ratings were introduced as part of IEC 61508 in 1998 and seek to quantify the probability of dangerous system failure. In this article, GARY BRADSHAW, Director at Omniflex, explores how SIL ratings work and the dangers of the misconceptions that exist around them. >

Functional safety, as defined by IEC 61508, is the safety that control systems provide to an industrial process or plant. Its purpose is to prevent both direct and indirect risk to human life that could result from those industrial processes, including risk caused by damage to equipment, property or the environment. Functional safety is a focus across the industrial spectrum, from petrochemicals and tank farms to oil and gas and nuclear safety.

The concept of functional safety was developed in response to the growing global need for improved confidence in safety systems. Major accidents in the late 20th century — like the Chernobyl reactor explosion and the Bhopal tragedy — as well as the advent of electrical and programmable electronic systems to carry out safety functions, have prompted a desire to engineer safety systems to “fail safely” or control dangerous failures when they arise.

One metric used to assess the risk of unsafe failure in industrial settings is SIL ratings, which correspond to the frequency and severity of hazards. They describe the probability of failure on demand (PFD) and the performance required for a safety instrumented function (SIF) to maintain safety.

The ratings go from SIL-1 up to SIL-4 — the higher the level, the higher the associated safety, and the lower the level, the greater the probability that the system will fail to perform. However, the installation and maintenance costs, as well as the system complexity, typically increase along with the SIL rating. The levels are distinguished by their acceptable rate of failure, which increases each time by factors of 10. For instance, SIL-1 systems accept one failure in every 10 demands; SIL-2 systems accept one failure in every 100 demands, and so on.

Does higher mean better?

One misconception is that higher SIL ratings are always superior for every application. Although SIL-4 does indeed offer the most reliability, the complexity involved with redundant back-up systems, more regular performance testing and hierarchical voting arrangements can be unwieldy and over-expensive if not necessary.

The correct SIL rating is application-dependent; for example, if a human operator can be relied upon to take action on an abnormal condition, such as for an alarm going off, then a SIL-1 system will suffice. Indeed, a safety loop involving a human cannot be rated above SIL-1 as systems are required to operate independently of operators for SIL-2 and upwards.



While the most critical applications, such as aircraft flight systems or nuclear reactor protection, require SIL-4 protection, correct safety analysis during the design stage is vital to determine the minimum acceptable SIL rating. Adhering to this recommendation will provide an adequate level of functional safety while maintaining cost effectiveness.

How are SIL ratings assigned?

SIL certification is a tool to measure the risk reduction provided by a SIF. To determine the safety integrity level of a SIF, the overall PFD must be calculated. This involves combining the failure rate data for each individual component within a SIF, such as sensors, programmable logic controllers and control elements, whether automated or human. The calculation must also account for the test frequency, redundancy and voting arrangements.

Companies such as TÜV Nord carry out independent assessments, although internal ratings can be done for systems up to SIL-1. Another common misunderstanding is that although individual modules can be SIL rated, it's only the overall systems that are assessed this way.

While regulatory processes would prevent installation of any insufficiently rated safety systems, it isn't unheard of for industrial facilities to purchase higher rated systems than they need. The consequences here are mostly financial: not only will the components add unnecessary expense, but the installation process will be more complex and therefore more disruptive to the facility's daily production.

For these reasons, it's essential to engage a company with safety system expertise that understands the SIL hierarchy and different levels' suitability for different applications.

The difficulty of rating software

The normalisation of software-based or SMART components, as in those with embedded microprocessors, presented a new challenge in the early 21st century. While hardware assessments are straightforward, software verification in terms of safety function was less sure territory and led to reluctance in some industries to take advantage of technological developments.

The nuclear industry was no exception. Initially, each major UK nuclear operator launched separate verification programs to show compliance with the Nuclear Installation Inspectorate's safety certification. To help nuclear site inspectors while eliminating redundancy and duplication of individual work, the EMPHASIS tool was developed.

EMPHASIS's purpose is to achieve a common level of substantiation and assess SMART instruments for the nuclear industry against IEC 61508. Launched in 2005, it has been adopted by the Nuclear Industry SMART Instruments Working Group, made up of the significant entities in the UK's nuclear industry.

Alarm annunciator systems are a vital layer of protection in plant safety strategy. They provide operators with early warnings of an abnormal condition that can facilitate action before hazards take effect and enable human logic-driven intervention. The importance of these SMART safety tools meant that substantiation by EMPHASIS was essential for UK nuclear safety.

SIL ratings have been an important metric for industrial functional safety for 25 years, but misinterpretations still linger with regard to their application. To avoid incurring unnecessary cost and complexity, it's important for facility planners and managers to work with safety system suppliers who truly understand safety integrity levels.

Protecting firefighters by remotely monitoring vital signs



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With increasing global temperatures and longer fire seasons, keeping firefighters safe has become even more crucial.

An elevated core temperature and dehydration during firefighting can lead to death, making the monitoring of these issues critical to safety both in training and real emergency situations.

According to the 2023 Global Climate Report, from January to July the global surface temperature ranked third warmest in the 174-year record. These rises in temperature lead to longer and more active fire seasons which leads to an increasing necessity for active firefighters. In 2021, overexertion, stress and medical issues accounted for 57% of firefighter deaths in the US.

To address this problem, technology that enables the remote monitoring of firefighters' vital signs has recently been rolled out at the Emergency Services Academy in Finland. The VTT Technical Research Centre of Finland Human Thermal Model team, HTM Solutions, successfully deployed a new version of its Cee® application using the Human Thermal Model (HTM), which has the ability to monitor multiple firefighters in real time.

HTM technology delivers a wide range of information, including body core temperature, sweating rate and Physiological Strain Index. HTM estimates these vital signs using individual body composition, such as height and weight, and non-invasive case-dependent information — such as a remotely monitored heart rate — as input data. It offers advanced thermal body parameter values without the need for invasive probes, special pills or direct body temperature measurement.

"Firefighters need to know that their body temperature has not gone too high and this is particularly hard to tell in stressful conditions

where firefighters are used to pushing through discomfort," said Pekka Tuomaala, Principal Scientist at VTT.

"Training and exercising while wearing heavy firefighter gear first impacts cognitive skills and then eventually kills you if you are not made aware of your condition. The ultimate human limit is 40 degrees Celsius and legislation says that 38.5 degrees is the maximum allowed for this dangerous work in most cases."

Emergency Services Academy Finland is responsible for the education, best practices and training of new firefighters in Finland. Prior to working with HTM Solutions, firefighter students were required to swallow a pill to monitor their body core temperature during training.

"We were considering ways to measure the core temperature of emergency situation students in real time and without inserting uncomfortable measurement devices into the body," said Pekka Lindholm, Head of Training at Emergency Services Academy Finland.

"VTT had already done testing with our students using the HTM model and a comparison of the consistency of the results of this model against the result given by the pills swallowed or inserted into the body. The new system enables the monitoring of multiple firefighter students from a single smart tablet without the use of expensive and less pleasant pills."

The benefits of the technology from HTM Solutions for firefighters has now opened the door to other critical and non-critical uses of HTM. This could include athletes or people working in hostile conditions, who may benefit from less invasive and less expensive monitoring.

REGISTER NOW FOR AMW2024 IN SYDNEY



Register now at
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Australian Manufacturing Week (AMW2024) will be held at ICC Sydney, in Darling Harbour, from 17–19 April 2024.

There will be seven zones on the show floor, each showcasing different areas of expertise.

The Austech Machine Tools Zone specifically targets the metalworking, machine tool and ancillary market in the global manufacturing space.

The Additive Manufacturing Zone will showcase various techniques within additive manufacturing, including stereolithography, selective laser sintering, material extrusion, sheet lamination, binder jetting, cold spray processing, material jetting, directed energy deposition, and many more of the most advanced technologies within this sector.

Meanwhile, the Australian Manufacturers Pavilion showcases the capabilities of Australia's precision engineering and advanced manufacturing industry.

The Manufacturing Solutions Zone offers a concentration of optimised solutions to the most common challenges experienced by manufacturers — from materials handling and warehousing to integrated manufacturing and safety solutions.

The Robotics & Automation Zone will feature the latest state-of-the-art equipment and processes for the optimisation of manufacturing operations. There will be industrial robotics, automated solutions, instrumentation control systems, pneumatics and IOT solutions, to name a few.

The Weld and Air Solutions Zone will highlight advanced welding processes and provide high-quality interactive experiences that demonstrate the latest developments and applications in the welding sector.

Finally, the Plastic Technology Zone will showcase the latest in plastics machinery, mould-making technologies, recycling materials and the many plastics manufacturing processes. Plastic technology is a specialised branch of study which includes the study of diverse types of chemicals that exhibit plasticity.

AMW2024 is run by the Australian Manufacturing Technology Institute Limited (AMTIL), with the NSW Government as the major sponsor. It will occupy more than 6560 square metres of exhibition space at the Sydney ICC at Darling Harbour. More than 215 organisations have already taken stands to showcase the latest manufacturing technologies, processes and support services.

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