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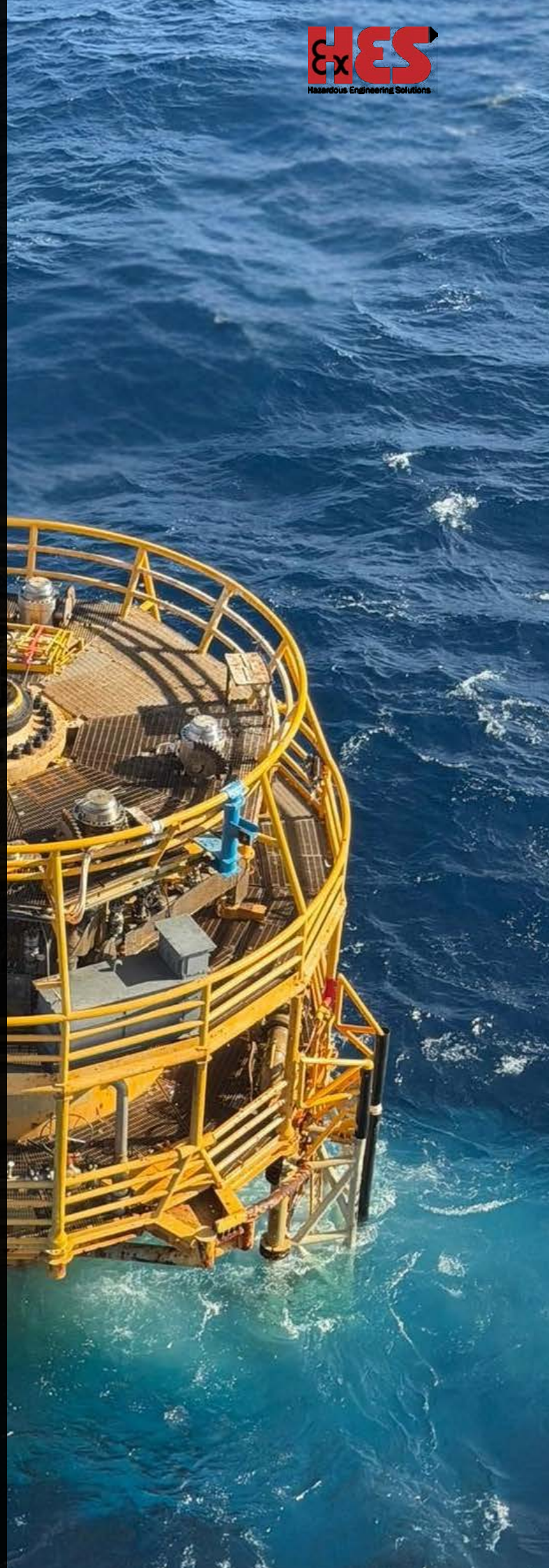
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The Digitalisation of Knowledge and Its Impact on Process Safety

The walls of the DEKRA office are lined with a myriad of books and technical references. Each one contains the distilled knowledge of countless hours of work, yet many will never be opened again. As we move further into the age where all information is expected to be available whenever we so much as request it, I worry that the information trapped within these books and the minds of more senior engineers may fade into obscurity as a new generation of engineers develops.

As someone born in the generational hysteresis between Millennials and Gen-Z, I can just about remember life pre-computer. Phones were bricks, and computers lived in their own room in the house, but even then, the internet was quickly overtaking "traditional media". Now, using AI is quickly becoming the default position for many tasks, whether that be drafting a process procedure, producing an advertisement, or rewriting something that was perfectly adequate to begin with. A recent study by the Higher Education Policy Institute states that 94% of university students report using generative AI platforms to produce assessed work. A similar study conducted by MIT found that students who regularly used AI showed less brain activity during writing tasks, even when they were not using AI.

This trajectory suggests that the integration of AI into our lives is no longer optional, but inevitable. As these tools become embedded in everyday workflows, choosing not to use them increasingly equates to accepting reduced efficiency and competitiveness. The expectation is already shifting from whether AI should be used to how well it can be applied.

This reliance introduces a clear risk: as outputs are generated rather than derived, the depth of thinking and understanding behind them diminishes. Over time, this could erode the critical thinking and practical understanding that underpin good engineering practices. This is especially true for process safety, as many standards are locked behind paywalls and proprietary guidance, limiting the reliability of AI-generated outputs. As such, AI operates without access to much of the underlying authoritative material. DEKRA has tested the use of AI for developing hazardous area classifications and found that while outputs may at first appear convincing, they range from technically unsubstantiated to dangerously inadequate. In one instance, AI recommended a large zone 0 surrounding an outdoor pump, which contradicts fundamental ventilation principles, simply because it misinterpreted the wording of the prompt. The issue here is that because they look convincing, someone without sufficient knowledge on the topic could choose not to question any output.

In contrast, traditional literature offers a level of rigour and permanence that remains difficult to replicate. A well-written process safety manual is not simply a repository of information, but a structured body of knowledge which has been developed, reviewed, and refined over time. Unlike AI-generated outputs, which by definition lack transparency in their reasoning, books provide traceability: assumptions are stated, methodologies are justified, and conclusions are grounded in established principles. In process safety, where errors carry significant consequences, this reliability is not a luxury but a legal necessity. This does come with the caveat that, unlike AI, the information in a textbook cannot change. This can lead to situations where critical guidance becomes outdated long before the next revision cycle, creating a widening gap between documented best practice and emerging industry knowledge.

Moreover, engaging with technical literature demands a slower, more deliberate form of thinking. The process of interpreting, questioning, and applying information helps foster a deeper understanding than passive consumption. While AI may provide rapid answers, traditional media cultivates the judgment required to assess whether those answers are correct. I would certainly have more faith in the competence of someone who has studied a single book on risk assessment than a person who has spent the same amount of time consuming generated

content on it.

Despite these limitations, it is equally important to recognise where AI offers genuine value. It is not limited to generating reports; it also acts as a gateway to knowledge that, only a few decades ago, may have been largely inaccessible. DEKRA has observed a growing client expectation for technical excellence, reflected in the increasing depth and quality of the questions we receive. This shift suggests that the traditional gatekeeping of hazardous area classification as a "black art" confined to specialist texts is no longer acceptable. Under DSEAR, the need for an informed and competent customer is explicit. While AI cannot provide all the answers to make a person competent, it can play a key role in prompting the right questions.

This is without even mentioning the wide range of other applications for AI within process safety. From predicting process failure far before any instrument could, to supporting complex scenario modelling that would once have required specialist expertise and days of computing time. These capabilities also demand robust human oversight: without informed review, there is a risk that AI-generated predictions may be misapplied, misunderstood, or over-trusted in safety-critical environments.

Ultimately, the question is not whether AI or traditional media should prevail, but how the two can coexist without undermining one another. The accessibility and adaptability of AI have the potential to democratise knowledge, breaking down barriers that once confined critical understanding to textbooks and experienced professionals. At the same time, the depth, scrutiny, and reliability of traditional sources remain essential in ensuring that this knowledge is applied correctly. If the books in our offices are to become less frequently opened, their value must not be diminished, and neither must the expertise required to interpret what they contain. The goal should be not simply to work faster, but to demonstrate and uphold competence. This ensures that, like the invention of the computer itself,

AI is used as a companion to rather than a substitute for understanding. In doing so, we avoid a future where information is abundant, but understanding is shallow.

This article was written by a human and reviewed with the assistance of AI.

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<https://arxiv.org/abs/2506.08872>



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IEC 60079-0 Edition 8 Expected To Address The Increasing Complexity Of Hazardous Area Operations

The imminent publication of IEC 60079-0 Edition 8 will likely mark a significant development for the explosion-protection industry, with expected refinements reflecting both evolving industrial realities and lessons learned from the practical application of Edition 7. For manufacturers, certification bodies, and end users alike, the updated standard will represent more than a routine revision; signalling a broader industry shift toward greater transparency, more robust verification requirements and improved clarity in the communication of safety-critical information.

At its core, Edition 8 is expected to address the increasing complexity of hazardous area operations. Modern industrial environments are now shaped by wider global temperature variations, the continued growth of portable electronic equipment and the integration of digital technologies into plant infrastructure. The revised standard will likely respond directly to these changes while also resolving a number of technical ambiguities identified in the previous edition.

One of the most noticeable expected changes is the revised approach to ambient temperature marking. Under Edition 7, equipment operating within the commonly accepted range of -20 °C to +40 °C often required no specific temperature marking. Edition 8 may remove this assumption entirely by requiring manufacturers to state the exact rated ambient temperature range on all certified equipment. Although seemingly straightforward, this amendment will introduce a much

higher level of clarity for operators and maintenance teams working across diverse environmental conditions, from arctic installations to high-temperature process environments.

The standard will place greater emphasis on verification through testing rather than reliance on procedural controls. This is particularly evident in the treatment of portable equipment. Previous editions allowed certain electrostatic discharge considerations to be addressed through Specific Conditions of Use, commonly identified by an "X" suffix on certification documentation. If Edition 8 moves away from this approach, we will see transferred charge testing and maximum capacitance assessments mandatory for portable devices. The result will be a more consistent and demonstrable safety baseline supported by measured performance rather than operational caveats.

Several of the revisions may appear relatively minor at first glance, yet they carry potentially significant engineering implications. Updated voltage ratings for batteries and cells, for example, can directly influence the calculations associated with intrinsically safe circuits. Similarly, if ingress protection requirements are expanded, it will ensure equipment integrity is maintained even while systems are not in operation. We expect to see enclosures incorporating socket-outlets to include protective caps or equivalent safeguards to prevent the ingress of dust or moisture during periods of inactivity.

The industry's digital transformation will likely be addressed in Edition 8. Manufacturers should be permitted to supplement conventional product markings with QR codes and machine-readable codes, providing improved access to certification data, instructions and safety information. At the same time, the standard should reinforce the importance of clearly identifying equipment subject to Specific Conditions of Use, ensuring that "X" markings remain explicit and easily understood.

For manufacturers operating in global markets, the introduction of Edition 8 will provide an opportunity to reassess existing product portfolios against revised requirements. While equipment certified to Edition 7 remains valid to that standard, a proactive review of product markings, documentation and technical assumptions will help organisations align with the latest expectations of the international hazardous area sector. In an industry where compliance, clarity and confidence are inseparable from safety, the transition to Edition 8 will be a meaningful step forward.

Jayson Shepherd, Certification Engineer, Element

Learn more about explosive atmosphere testing and certification with Element at <https://www.element.com/connected-technologies/explosive-atmosphere-testing-and-certification>



Comprehensive Auto-ID portfolio from Pepperl+Fuchs

Auto-ID, automatic identification and data capture, has become an integral part of modern industrial life. This technology makes numerous processes more efficient and simplifies tasks for workers. Pepperl+Fuchs offers a comprehensive portfolio of solutions for these duties, suitable for a wide range of application scenarios.

Data forms the basis for all kinds of processes. However, these must correctly recognize and record the corresponding codes so that data can be further processed. Common technologies for data collection used in Auto-ID include barcodes, QR codes, RFID, magnetic strips, and biometrics. The most common areas of application in the industrial environment include inventory management, delivery tracking, component identification, and order picking. Auto-ID increases efficiency, minimizes errors, and automates processes.

The way it works is that an object is provided with a code that is not always visible to the human eye but can be read by a device. A barcode scanner or RFID reader, for example, automatically reads this code. The information is hence recorded, transmitted, and made immediately available for further processing, analysis, or process control. Software solution for simple scanning tasks

With the eBARCODE-ML app, Pepperl+Fuchs offers a powerful software solution for scanning tasks on its mobile devices. Depending on the certification of the mobile device on which the app is installed, it can be used in environments up to Zone 1 / DIV 1. It can read virtually all types of barcodes and decode them offline. Its accuracy is comparable to that of integrated scanner modules. The app captures barcodes at a maximum distance of 50 centimeters.

Scanner snap-on for the Smart-Ex® 203

The SM-Ex S203 SR scanner module for the new Zone 2 smartphone Smart-Ex® 203 is a hardware solution designed for demanding scanning tasks in Zone 2 / DIV 2. It can be quickly and easily attached via the innovative accessory interface and transforms the smartphone into a convenient 1D/2D scanner.

The module features a hardware aimer that uses an LED to indicate the area the device is aligned with. This enables precise alignment with the barcode to be read, even in low light areas. The module also allows damaged or poorly legible barcodes to be read reliably. The Smart-Ex® 203 features Android 14, a cutting-edge operating system that optimally supports the latest communication standards. The pending Android Enterprise Recommended and Google ARCore certification make the smartphone ideally suited for demanding augmented reality applications such as remote support, training and other company-specific tools. Additional features include a fingerprint sensor that allows unlocking without entering a code, thus enabling biometrically supported multi-factor authentication for maximum security. In addition, the smartphone has a rear camera with 48 megapixels, an autofocus and an LED flash, as well as a front camera with a resolution of 16 megapixels. The LED can also be conveniently used as a flashlight. The cameras can be used to take not only high-quality pictures but also videos in full HD resolution.

Professional scanner for the most demanding requirements

The Ident-Ex® 02 handheld scanner is available in four different versions to meet a wide range of high-level scanning requirements. The Pocket model is a small, handy scanner that fits in your pocket, whereas the Grip and Grip+ models come with an ergonomic pistol

grip. Both Grip models can be upgraded to a Smart Grip using separately available cradles. The cradles allow for the Smart-Ex® 03 and Smart-Ex® 203 smartphones to be snapped onto the scanner which then transmits the scanned information directly via Bluetooth to the smartphones. Thanks to its Bluetooth functionality, the Ident-Ex® 02 can also be connected to any other Bluetooth-enabled device. The Pocket variant is the smallest and lightest wireless barcode scanner on the market, certified for use in Zone 1/21 / DIV 1.

Thanks to the 1,430 mAh lithium-ion battery, all variants do not rely on external power sources. This makes the Ident-Ex® 02 more flexible and easier to use. In addition, all configurations can be easily charged via USB-C; the HMI variant Grip+ can even be charged within Zone 1/21 / DIV 1 via the S3/S4 interface of the VisuNet GXP or within Zone 2/22 / DIV 2 via the VisuNet FLX system. For added convenience, the Grip, Grip+, and Smart Grip variants can be charged using a magnetic charging cable. The Ident-Ex® 02 supports all common 1D and 2D symbologies, such as EAN-13, UPC-A, ISBN, Industrial 25, QR Code, DataMatrix, Maxicode, and many others. Bluetooth is supported in the versions Classic and 5.4 LE.

Extensive portfolio for a wide range of application scenarios

Pepperl+Fuchs offers a comprehensive solutions portfolio to meet a wide range of application scenarios for Auto-ID in the industrial sector. From simple scanning tasks that can be implemented with an app as a software solution to the most demanding requirements in hazardous areas, Pepperl+Fuchs solutions cover every conceivable scenario and can be configured to fit any application.

www.pepperl-fuchs.com



EEMUA Welcomes Johnson Matthey As A Corporate Member

The Engineering Equipment and Materials Users Association (EEMUA) is pleased to announce that Johnson Matthey has joined the Association as a corporate member.

Johnson Matthey is a global leader in speciality chemicals and sustainable technologies, operating advanced manufacturing facilities across multiple countries. With a long-standing commitment to innovation, engineering excellence, and the development of solutions that support the transition to a more sustainable future, the company brings expertise that aligns strongly with EEMUA's mission.

EEMUA exists to help users of engineering equipment improve their safety, efficiency, regulatory compliance and bottom line. The addition of Johnson Matthey strengthens the Association's diverse membership base and supports its goal of bringing together engineers from a wide range of sectors to share experiences, learn, and solve problems. Welcoming the organisation's newest member, EEMUA Chief Executive Stefan Kukula said: "We are delighted to welcome Johnson Matthey into EEMUA. Their global perspective, technical capability, and commitment to sustainable industrial operations will enrich our community and contribute to the shared learning that sits at the heart of EEMUA's work."

commented: "We are delighted to join EEMUA as a corporate member. This partnership reflects our commitment to engineering excellence and continuous improvement. Through EEMUA, we look forward to advancing capability development across our teams, standardising engineering practices, and contributing to a shared industry agenda. Access to a collective knowledge base and collaborative learning opportunities will strengthen our organisation and help us deliver safer, more efficient operations."

As a corporate member, Johnson Matthey will have access to EEMUA's full suite of resources, including specialist committees, technical publications, competency-based training, and opportunities to participate in cross-industry initiatives. The company's involvement will support the development of good practice across sectors while enabling Johnson Matthey's engineers to engage with peers facing similar operational and regulatory demands.

EEMUA looks forward to Johnson Matthey's active participation in the Association and to the benefits this involvement will bring, strengthening EEMUA's collective expertise while supporting Johnson Matthey in its ongoing drive for safe, reliable, and efficient operations worldwide.



JM Johnson Matthey

Muhammad Ahsan Arshad, Johnson Matthey Asset Integrity Lead

Enerpac E-mover streamlines container spreader maintenance for APM Terminals Spanish Gateways

Major global port and container terminal operator, APM Terminals, is using an Enerpac EMV-Series (E-mover) skate for container handling spreader maintenance at its terminal in Valencia, Spain. The wireless operated skate allows APM Terminals to streamline spreader maintenance as well as providing an improved work environment for asset maintenance technicians.

Attached to a port crane, the container handling spreader is a machine designed to lift shipping containers weighing up to 45 tonnes. In the busy APM Terminals Valencia, operating 24/7 and handling up to 1.4 million TEUs (twenty-foot equivalent units) containers each year, efficient maintenance is essential.

Until now, the spreader was maintained outside the terminal's workshop as there was no easy way of moving the 13 tonnes, 6m long and 2.5m wide tool into the building. Moreover, this meant that only one spreader could be maintained at a time. By using a combination of Enerpac E-mover, equipped with a 50t capacity hydraulic cylinder, and MLS-Series load skates, each container handling spreader is easily lifted and transported into the workshop. In addition to enabling a safer and more pleasant working environment for maintenance technicians, the manoeuvrability of E-mover allows a second spreader to be positioned alongside the first, enabling simultaneous maintenance of both machines.

"The Enerpac E-mover has made a big difference to our container spreader maintenance operations," says Joan Carbó, Equipment Project Engineer at APM Terminals Valencia. "The ease of deploying and using the E-mover makes maintenance safer and quicker, lifting

our safety standards, as well as allowing us to fully optimise the space available in the workshop."

Enerpac E-mover

Enerpac EMLS/EMV Series battery-powered machine skates are designed for moving heavy machinery in confined spaces. They allow a single operator to safely and remotely position loads of up to 55 tons. E-movers feature dual-drive motors and a 360-degree tilt swivel saddle for ease of manoeuvrability in small areas and around tight corners. Precise control is enabled with the wireless remote-control including two joysticks to advance and steer the load, and variable speed control for changing conditions.

For more information on the Enerpac EMLS/EMV Series battery-powered machine skates, visit www.enerpac.com



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Controlling Dust In Production



Nicolas Van der veken, Product Manager at Donaldson

Effective dust control can support optimal working conditions, as well as compliance with dust emissions standards and regulations, and can help mitigate risks associated with combustible dust*.

For effective dust control filter efficiency is often the focus, while two other key factors – exposure and emissions – are commonly overlooked. Failing to consider these two elements can mean that dust control performance is not fully optimised.

A qualified industrial hygienist can audit a facility to evaluate air quality and potential employee exposures, determining average or peak concentrations of contaminants. Hooding can be an effective means of reducing exposure to dust, which should be designed effectively and properly located near the dust generation source. An audit can identify the facility's dust sources to verify if ventilation hooding currently in use is appropriate. This is often when new dust generation points and the need to add controls, such as additional hood locations, are identified.

Once exposure areas have been addressed, the next step is to review appropriate dust collection technology. A dust collector should deliver consistent and predictable performance that effectively removes contaminants, while maintaining a consistent air volume at a predictable energy cost.

When assessing the appropriate dust collector, it is also important to carefully analyse the type of filter and its efficiency. A filter in a regenerative dust collector is often pulse-cleaned under heavy loads. It must handle new dust entering the collector, in addition to all the dust accumulated on it over time. Evaluating a dust collector in terms of what it achieves at its stable set point, and using exposure and emissions testing will give a better indication of the ventilation system's performance.

Outlet emissions are what ultimately passes through the dust collector. It is therefore important to know the quality

of the filtered air being emitted back into the building or exhausting outside. This requires systematic testing to monitor air quality. For some facilities, industry-relevant regulations mandate continuous emissions monitoring. Other local and international standards may also apply, dictating the need for a variety of test methods to determine emissions or exposure limits.

Once ventilation needs and emissions limits are understood, a qualified industrial ventilation designer can design a dust collection system. They will identify what the dust load demands may produce in terms of energy and cleaning consumption, and how to achieve emissions goals in both a cost and energy efficient way.

Effective dust management can help prevent airborne particle contamination during manufacturing, support product quality consistency, and reduce production interruptions from contamination problems. Dust filtration can also help protect equipment, as well as contribute towards prolonging machinery life and overall system performance.

Additionally, extended filter longevity can minimise operational downtime, while reduced air consumption can support lower long-term operational and energy costs.

Taking into consideration dust collection in terms of exposure, efficiency and emissions will support the optimisation of dust control performance throughout the production process.

Contact Donaldson for expert support with your dust control challenges

<https://utm.io/ujzhb>



JCE Delivers Autonomous ATEX Certified Power Solution for Critical Offshore Monitoring Project

JCE has successfully designed, manufactured, and commissioned a fully ATEX and IECEx certified temporary battery power system to support critical subsea cable monitoring operations at the Okha offshore facility in Western Australia.

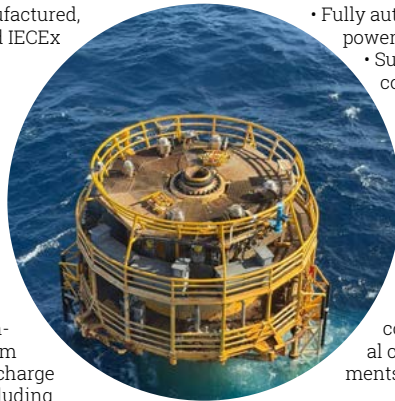
Delivered in collaboration with Viper Innovations Ltd, the solution ensured uninterrupted monitoring during a 75 day period when the primary support vessel and its power supply was unavailable due to scheduled maintenance.

Engineered specifically for hazardous offshore environments, the autonomous 48Vdc battery system was designed to operate continuously without recharge while withstanding harsh marine conditions, including high winds, salt spray, and heavy rainfall. Its compact, plug-and-play design enabled rapid deployment within a tight installation window on a floating production structure with restricted space.

The system combined Viper Innovations' continuous insulation monitoring and early fault detection solution with their self-healing cable technology, V-LIFE, to reduce failure risk and strengthen asset integrity throughout the maintenance period. Despite significant logistical challenges, including remote offshore access and a limited 5-7 day installation window, JCE successfully delivered and commissioned the system on schedule.

The project delivered key operational benefits:

- Continuous subsea cable integrity monitoring maintained
- Risk of insulation degradation significantly reduced



- Fully autonomous operation with no reliance on external power
- Successful installation within tight offshore time constraints

JCE's performance was recognised by project stakeholders, including Viper Innovations Ltd and Woodside Energy, highlighting the company's commitment to delivering high quality engineered solutions under demanding conditions.

This project reinforces JCE's capability to deliver reliable, hazardous area power solutions for complex offshore applications, ensuring operational continuity even in the most challenging environments.

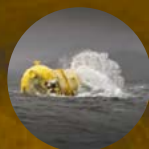
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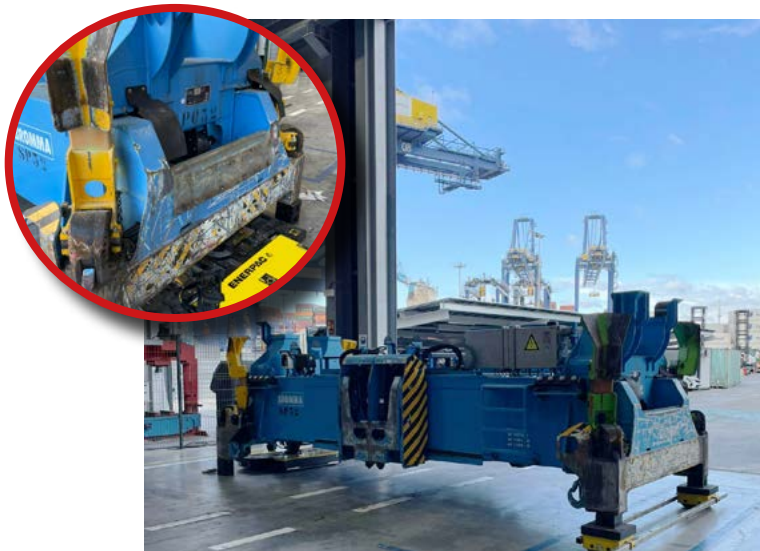
Until now, the spreader was maintained outside the terminal's workshop as there was no easy way of moving the 13 tonnes, 6m long and 2.5m wide tool into the building. Moreover, this meant that only one spreader could be maintained at a time. By using a combination of Enerpac E-mover, equipped with a 50t capacity hydraulic cylinder, and MLS-Series load skates, each container handling spreader is easily lifted and transported into the workshop. In addition to enabling a safer and more pleasant working environment for maintenance technicians, the manoeuvrability of E-mover allows a second spreader to be positioned alongside the first, enabling simultaneous maintenance of both machines.

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Hart Door Systems And Its Assault On Sea Salt

Being an island under the general heading of the 'British Isles' much land faces sea. The result is much economic activity depends on access to the sea which brings with it wind load challenges and the corrosive impact of salt itself writes Chris Dobson.

A recent tour of UK locations which feature Hart doors showed that five sites were exposed to highly corrosive atmospheres as well as extreme wind. Under these circumstances doors have to withstand wind up to 1250 pascals. It should be noted that Hart is capable of facing global challenges. As an example a block of flats in Hong Kong has Hart doors with no failures in six years.

Returning to the impact of salt from nearby seas, there are problems for industry caused mainly by accelerating corrosion and damaging equipment.

Salt-laden air near coastlines carries chloride ions, which are highly corrosive to metals. When these ions settle on industrial equipment, they can accelerate corrosion by making moisture more conductive, speeding up electrochemical reactions that rust metal.

Further the breakdown of protective oxide layers on metals like steel and stainless steel can lead to pitting and structural weakening. Typically the electrical infrastructure can be damaged with switchgear and transformers degrading faster in coastal environments.

Electricity distribution equipment corrodes more quickly, reducing lifespan and increasing maintenance costs and in general threatening reliability.

Even concrete structures can be affected by chloride ions which penetrate concrete and corrode internal steel reinforcement. To avoid this, protective coatings such as marine grade paints can assist, polymer coatings, galvanisation) to isolate metal from salt exposure.

The key message is all main access to buildings should be protected by automatic door systems such as Harts insulated rolling shutter doors manufactured in the UK. As the longest established British manufacturer of high-speed insulated roller shutters, Hart offers a range of reliable custom insulated shutters suited to specific requirements. Hart has a wide selection of lath profiles recommended for temperature control.

After a recent, intensive tour of projects in Scotland, Nick Hart, Hart's managing director, gives a detailed insight into the issues faced as result of sea salt. "Yes the electrical equipment is one area which is cause for concern in a saline environments but equal consideration should be made to the materials the doors is made from and particularly the effects of galvanic corrosion when two dissimilar metals are in contact with one another, which accelerates the corrosion of one of the components," says Nick.

"We have reviewed the entire design of the doors that are destined

to be installed in such an environments and create isolating barriers between the different metals to slow down any potential corrosion, as well as using corrosion resistant materials, i.e. stainless steel and non-metallic materials where possible, special bearings and protective coatings. This approach gives the customer the best door solution for what is a very difficult corrosive environment."

Wind loading is another important factor. Mr Hart says; "Our approach is based on BSEN12424 details wind-class of doors and how to test them. It categorised wind class from 0 to 5, 5 being the most onerous and the door sample needing to survive a pressure of above 1000Pa + 25%, i.e. over 1250Pa".

Mr Hart adds; "As we know wind class 5 rating is not adequate for many installations throughout the UK, especially in coastal locations. As a result we designed a new type of roller shutter that is capable of surviving much larger forces and build an 8meter wide test rig and tested door sample to 3000Pa and 4000Pa plus 25%, that is door samples tested to 3750Pa and 5000Pa pressure levels respectively.

"This is a industry first and as a result we have successfully sold Typhoon roller shutters in areas that annually experience extreme wind conditions, which include Hong Kong where we have supplied these doors onto the Hong Kong airport and on high rise buildings up to the 19th floor."

www.hartdoors.com





ATEX in Context, Part 2 From Certification to Making Hazardous Area Compliance Work in

Part 1 set out why ATEX should be treated as the foundation of a broader compliance system, not a product checkbox. Part 2 looks at where that system breaks down, and what it takes to make it work.

The Gap Between Certification and Operation

One of the most common failures in hazardous area compliance is not a bad certificate, but rather a good certificate applied badly. Zone classification drawings and permit-to-work systems are often maintained by different teams, on different timelines, and never formally linked.

The drawing says Zone 1. The permit was written for a previous configuration. The technician follows the permit, not the drawing. This is where compliance gaps become safety gaps, not because the equipment was wrong, but because the controls around it were never connected.

Closing this gap requires zone drawings linked to permit-to-work controls, with a defined trigger for review whenever either changes. A competent workforce, evidenced through schemes such as CompEx, is

not a supplementary credential. It is the mechanism that makes every other control meaningful.

When the Certificate Leaves the Factory

For manufacturers, ATEX certification is awarded against a defined design. Maintaining it over the product lifecycle is a separate obligation, governed by quality assurance schemes most end users never see. Under QAN and QAR arrangements, manufacturers carry ongoing responsibility for ensuring every unit continues to conform to its certified design. EN ISO/IEC 80079-34 defines what this requires: change control, component traceability, internal audits, and a formal process for assessing whether any modification affects the basis of certification.

When these systems work, the certificate remains meaningful throughout the product's life. When treated as paperwork, the gap between certified design and actual product quietly widens, particularly in control panels, skid-mounted systems, and complex enclosures. This is where many failures start: an engineering change is raised, the modification is made, and nobody checks whether the original Ex assessment still holds.

What Insurers and Auditors Are Now Asking For

Part 2 – Control: Area Practice

Hazardous area compliance is increasingly visible beyond the engineering team. Insurers and auditors are not only looking for Ex certificates, they want evidence of joined-up governance: inspection histories, management-of-change (MOC) records, and clear links between zone classification, maintenance, and environmental monitoring.

A flammable vapour release that creates or extends a Zone 2 atmosphere may affect ATEX zoning, DSEAR risk assessment, environmental controls, and maintenance priorities simultaneously. Organisations managing these as separate files struggle to demonstrate control when any one is challenged. The pattern auditors repeatedly find is not non-compliant equipment. It is disconnected systems.

What Good Looks Like

The answer is not more certification. It is better connection between the systems that already exist.

That means digital asset registers where every item of Ex equipment carries its certificate, zone location, inspection history, and next inspection date. It means change control that flags ATEX implications automatically. It means inspection schedules aligned with DSEAR review cycles and IEC 60079-17 requirements.

The barrier is rarely technology. It is the organisational decision to treat compliance not as a file to be maintained, but as a system to be managed.





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Workplace And Environmental Monitoring: Free Webinar Series Returns With Additional Data & Software Training Modules

Casella, global occupational and environmental monitoring equipment manufacturer, has announced its latest schedule of training webinars for environmental and workplace monitoring.

The schedule of free-to-attend webinars will cover: workplace monitoring for noise, environmental boundary monitoring, hand and arm vibration, air sampling, as well as instrumentation usage and best practice.

New for 2026, Casella has also added dedicated software webinars covering Casella Insight Data Management and Casella NoiseSafe, giving attendees the opportunity to see live demonstrations of data workflows including importing, viewing and manipulating results, device configuration and reporting.

Available worldwide, most webinars will be hosted twice in one day at 10:00am and 3:00pm (UK time) to support attendance across multiple time zones. Software and solution demonstration sessions (including Insight, NoiseSafe and Guardian 2) will run as dedicated sessions. Each webinar will conclude with a Q&A session for attendees to ask Casella experts any pressing questions on the topic.

Further noise monitoring webinars will cover equipment best practice and the 'dos and don'ts' of using tools such as sound level meters and noise dosimeters.

For air sampling, Casella is offering webinars that introduce the principles of air monitoring as well as more practical guidance, including setting up air sampling pumps correctly to help ensure accurate exposure data. Additional sessions will also address specific airborne hazards and associated filter types, including an introduction to asbestos sampling.

Casella will also host webinars on the data required for environmental boundary monitoring on construction sites, including the key parameters for noise, particulate and vibration within regulations, alongside best practice guidance on siting, installation, operation and maintenance to support high-quality data and compliance with guidance and

legislation.

For Hand Arm Vibration Syndrome (HAVS), Casella will deliver a webinar reviewing terminology about HAV measurement, legislation and exposure limits, as well as how to measure exposure on the tool correctly and subsequently calculate exposure levels.

Phil Bradley, Managing Director at Casella, said: "We're pleased to bring back our free webinar series to help others to reduce occupational health and environmental risks in the workplace.

"These educational sessions provide in-depth knowledge and practical strategies to improve workplace health and safety. We have now included sessions around software use and data management as our solutions become more digital and data is more real-time focused." The series will run from April to November 2026. To view the full schedule and sign up for any of these webinars, free of charge, visit:

<https://tsi.com/learn/casella-training-courses/casella-webinar-series/>



The next generation of ATEX-certified impact drivers



Introducing the next generation of ATEX-certified impact drivers—where safety meets uncompromising performance. Developed by Atexxo, this explosion-proof cordless impact driver is engineered specifically for use in ATEX Zone 2 hazardous environments, delivering reliability without limitations.

Certified to ATEX Zone 2 II 3G; Ex ec h ic IIC T4 Gc, this cordless driver combines increased safety concepts with intrinsically safe switching, ensuring full compliance while maintaining the power professionals expect.

Unlike traditional solutions, this battery-powered design eliminates the need for pneumatic tools and hoses, offering unmatched mobility and ease of use. Built on proven industrial platforms and expertly converted for hazardous locations, it preserves all original functionality—now safe for use in explosive gas and vapor environments.

With up to 215 Nm torque, a ¼" hex quick-release system, and a lightweight, compact design, this impact driver is ideal for drilling, fastening, and wrenching across demanding applications such as petrochemical plants, offshore installations, and construction in hazardous areas.

Engineered for productivity and durability, it features a modified

non-sparking motor, intrinsically safe trigger system, and ATEX-compliant battery technology—ensuring safe operation without compromising performance.

Available as a complete set including body, battery, and charger (230V or 110V), with global delivery and support, this solution sets a new benchmark in explosion-safe cordless power tools.

Because in hazardous environments, safety should never come at the expense of performance.

www.atexxo.com

Introducing the next generation ATEX-certified impact drivers where safety meets uncompromising performance. Developed by Atexxo B.V.



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- Lightweight and compact
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- No more need for pneumatic tools and hoses
- Up to 215 Nm torque!
- ¼" hex quick-release system
- Certified to ATEX Zone 2 II 3G ec h ic IIC T4 Gc
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Safe & Efficient Drum Handling In Hazardous Areas

Do you have a need to lift or move drums, de-palletise or just generally move drums around a workshop or factory site in Hazardous Areas.

The St Clare Engineering range of Grab-O-Matic ATEX fork attachment and pedestrian drum handlers will provide a safe and efficient solution for you.

The popular and versatile Grab-O-Matic DLR range of rim grip fork attachment drum handlers are suitable for all types of steel drums, plastic 'L' ring drums and most fibre drums.

The extensive drum handling range includes the SC10 for lifting and rotating drums to dispense the contents, scissor grabs, base gripping units and waist grippers, the whole range can also be fitted to pedestrian stackers for use in confined spaces and places where fork trucks are banned. Bespoke units can be manufactured to suit customer specification.

We also have a range of Drum Cages for off-shore use and fork attachment Whiskey/Wine Barrel Base Grippers for use in the drinks industry.

We have also developed a Quick Attach/Release drum handler fork attachment for use in ATEX hazardous areas.

All Grab-O-Matic models can be Quick Attach/Release units and are securely attached to the forks and released without the need for the truck driver to dismount from his cab, saving time and increasing safety!

The drum handlers can be manufactured completely from stainless steel or part stainless steel to suit customer requirements and the spark proof area the units are operating in.

All Grab-O-Matic fork attachments are issued with Test Certificates, CE marked and manufactured entirely in the UK to ISO 9001:2015 and will be certified for use in ATEX spark proof areas.

For more information on our extensive range of drum and materials handling equipment please contact Andy Bow on 02380 643402 or email sales@stclare-engineering.co.uk



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Handle your drums Safely, Simply & Efficiently with the Grab-O-Matic Range of Stainless Steel /ATEX Drum Handling Equipment



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- Pedestrian Drum Carriers
- Drum Rotation Units (Fork Mounted and Crane Slung)
- Self Dumping Hoppers
- Pallet & Stacker Trucks
- Pedestrian Drum Rotators
- Scissor Grab Drum Handler

St Clare Engineering Ltd (Grab-O-Matic)

Unit 1, Brookwood Industrial Estate, Brookwood Avenue, Eastleigh, Hampshire SO50 9EY

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Every worker. Every heartbeat. Every zone.

The IS440.x, IS540.x and IS940.x, together with the IS-SW1.1 smartwatch, form a powerful worker safety ecosystem by i.safe MOBILE.

Monitoring vital data, enabling instant alerts and keeping teams connected wherever they work. Because in hazardous areas, safety isn't optional.



i.safe MOBILE

isafe-mobile.com

How The Right Combination Of Certified Mobile Devices Can Form A Reliable Worker Safety Ecosystem In Hazardous Areas

When work takes people into areas where a single spark can be catastrophic, the tools they carry must do more than function reliably. They must keep workers safe, connected and informed, at all times. A well-considered selection of ATEX-certified mobile devices can form exactly that kind of ecosystem – one that addresses worker safety comprehensively, without requiring a proprietary end-to-end system.

The combination of the IS440.1 5G radio, the IS540.1 5G smartphone, the IS940.1 5G tablet and the IS-SW1.1 smartwatch from i.safe MOBILE is one such approach. Each device is certified for use in Zone 1/21 and together they cover the full range of communication, data capture, monitoring and alerting that modern hazardous-area operations require.

Vital data, where it matters most

The IS-SW1.1 smartwatch, certified for Zone 1/21, is worn on the wrist and continuously monitors physiological parameters, providing real-time vital data that supervisors can track remotely. Heart rate, movement patterns and alarm triggers give safety teams the situational awareness they need, without relying on workers to actively report incidents. In high-noise or high-risk situations, that difference can be decisive.

The smartwatch also serves as a discreet alert channel. Workers can trigger man-down alarms or no-movement alerts automatically, without reaching for a handheld device. The wearable form factor means it integrates naturally into existing workflows, without adding complexity or distraction.

Three devices, one coherent approach

The IS440.1 is a 5G radio certified for Zone 1/21, running on ISM-OS 14, i.safe MOBILE's own Android-based platform specifically tailored for hazardous environments. It ensures secure and failure-free PoC communication via public or campus networks, whether over 4G, 5G or Wi-Fi®. A gateway makes the IS440.1 interoperable with previous radio technologies, enabling seamless integration into existing communication infrastructures without replacing what is already in place.

The IS540.1 is a ATEX-certified 5G smartphone for Zone 1/21, designed for communication, documentation and system access in demanding field environments. The 5G IS940.1 adds a full 10.1-inch tablet form factor, suited for scanning-intensive workflows and more demanding field operations. Both integrate seamlessly with enterprise mobility management systems and existing backend infrastructure, making them a practical choice for organisations that need to build on what they already have.

tem is not a fixed system architecture, but the way these independently certified devices complement each other in practice. Real-time data flows between the smartwatch, the tablet, smartphone, 5G radio and backend monitoring platforms, giving organisations a coherent picture of their workforce in hazardous areas.

Safety as a system, not a feature

Lone worker protection, emergency communication and compliance documentation are often managed as separate solutions in industrial environments. A thoughtfully assembled combination of Zone 1/21-certified devices, such as the ones described here, can bring these functions together without requiring a proprietary closed system. That flexibility reduces integration effort, lowers total cost of ownership and, crucially, removes the gaps between solutions where incidents can go undetected.

For safety managers, such an ecosystem provides the oversight and traceability that modern hazardous-area operations demand. For workers, it means carrying devices that are reliable, intuitive and built for where they actually work. The right devices, chosen with care, can make the difference.

www.isafe-mobile.com



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MTX 3297 Ex – Certified for Zone 0 Environments

In industries such as chemical plants, pharmaceutical production facilities, oil refineries and mining - precision, reliability, and safety are paramount! The MTX 3297 Ex digital multimeter from Chauvin Arnoux is built to improve how professionals work in explosive atmospheres. Certified under European directive 2014/34/UE, it meets strict safety standards for hazardous zones, including gas zones (0, 1, 2), dust zones (20, 21, 22), and M1 mining applications.

This allows technicians to perform essential tests and troubleshoot with certainty and reduced risk. But offering safety is just the starting point!

Maintenance teams face increasingly difficult challenges, for example, dealing with stray voltages, fluctuating signals, and the need to quickly pinpoint faults in high-risk industrial systems. The MTX 3297 Ex offers advanced measurement capabilities, including low-impedance voltage readings and a low-pass filter for PWM signals, which minimise interference and provide accuracy in tough environments. Its features, such as Min/Max, Peak, and differential measurements, enable specialists to perform detailed diagnostics, quickly identify anomalies, and make informed decisions to prevent equipment failures.

This digital multimeter stands out for its detailed measurement capabilities! Its broad range, including capacitance measurement and extended frequency coverage, makes it suitable for a range of industrial applications. For businesses, this leads to faster problem-solving, improved reliability, and reduced downtime.

The dual display allows users to view two measurements simultaneously, reducing mode changes and enabling technicians to identify issues more quickly. This saves time, eliminates errors, and streamlines maintenance tasks.

The MTX 3297 Ex is also built for use in harsh industrial conditions. With an IP67 rating, it is protected against dust and can withstand exposure to water, making it reliable in dusty, wet, or tough environments. Its high safety ratings (1000 V CAT III / 600 V CAT IV) mean it can be used confidently on high-energy electrical systems commonly found in industrial plants. ([RL1.1][GU1.2])The CAT rating indicates suitability for specific electrical zones.

CAT III applies to distribution-level equipment with lower fault currents protected by miniature circuit breakers (MCBs) and is used

downstream of the incoming fuse. CAT IV is intended for use upstream of the distribution board (DB) for utility operations and/or systems.)

For companies operating in hazardous environments, the MTX 3297 Ex improves safety, enables faster, more accurate fault detection, and helps preserve seamless equipment operation.

Visit www.cauk.net to learn more or book a free demonstration.





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IIC (dust) 20, 21 and 22



Mines M1





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Designed for Explosive Atmospheres

TER Tecno Elettrica Ravasi's FOX, TOP and 7551-7552 limit switch series are now available with ATEX certification, ensuring maximum reliability and safety even in potentially explosive atmospheres.

In the industrial automation sector, control and safety devices play a crucial role, especially in environments classified as explosion-risk areas.

Among these, TER Tecno Elettrica Ravasi limit switches represent a reliable and versatile solution for monitoring the position and movement of machinery with rotating parts, lifting systems and other industrial equipment.

When used in hazardous environments, these devices must comply with strict regulations such as the ATEX Directive 2004/34/EU.

What is a limit switch?

A limit switch is an electromechanical device designed to detect the position of moving components by activating or deactivating electrical contacts when predefined positions are reached. This makes it ideal for applications such as:

- slowing-down, stopping and end-of-travel control functions,
- position and speed monitoring,
- automatic management of industrial cycles.

ATEX Certification: Safety in Hazardous Areas

The ATEX certification obtained by TER for the FOX, TOP and 7551-7552 products confirms their suitability for operation in potentially explosive atmospheres caused by the presence of combustible gases or dusts.

ATEX Zones for Gas, Dust and Mining Applications

Zone 2 (Gas): area where the presence of an explosive atmosphere is unlikely and, if it occurs, persists only for a short period.

Zone 22 (Dust): area where the presence of combustible dust in hazardous concentrations is rare and temporary.

Mining applications: IM2 category equipment intended for underground mines where firedamp (methane) and combustible dust may be present.

In addition to standard industrial environments, ATEX limit switches are also used in the mining sector, where operating conditions are even more critical.

The IM2 classification identifies equipment intended for underground mining applications with the presence of firedamp (methane) and

combustible dust.

Main Features of FOX, TOP and 7551-7552 ATEX limit switches

The ATEX-certified limit switch series for Zone 2, Zone 22 and IM2 applications generally includes the following features:

- robust housing made of metal alloy or reinforced technopolymer,
- high degree of protection,
- highly reliable electrical contacts,
- corrosion-resistant components,
- multiple certifications for gas, dust and mining applications.

Operational Advantages

The adoption of the ATEX-certified FOX, TOP and 7551-7552 series provides several benefits:

- Safety: prevention of explosion risks.
- Reliability: continuous operation even in harsh conditions.
- Versatility: suitability for different sectors including chemical, food processing, energy and mining.
- Reduced maintenance: thanks to robust and durable construction.

Fields of Application

These devices are used in:

- oil & gas plants,
- chemical and petrochemical plants,
- silos and grain processing facilities,
- cement plants,
- power generation plants,
- underground mines,
- material handling systems,
- lifting equipment,
- mobile power supply systems.

Conclusion

The ATEX certification issued to TER by ConformEX represents an important recognition of the quality, reliability and safety of its products intended for hazardous environments.

This achievement confirms the company's continuous commitment to compliance with international standards (IEC EN) and to the development of technologically advanced solutions capable of ensuring high safety standards for operators and industrial plants.

Thanks to these certifications, the company further strengthens its market position as a competent and reliable partner for all industries where safety is an essential requirement.



Advanced Offshore Lifting Solutions for Hazardous and Explosive Environments

Founded within the Pellegrini Group in 1962 and operating independently since 1982, M.E.P. Pellegrini Marine Equipments has become a globally recognised specialist in lifting and handling equipment for offshore, marine and hazardous industrial environments. With more than 45 years of experience in the offshore oil and gas sector, the company designs and manufactures tailor-made systems engineered to operate safely in demanding explosive atmospheres.

Key Capabilities

- Offshore cranes and lifting systems
- Deck machinery and marine winches
- Lifeboat and rescue boat davits
- Engine room overhead cranes
- A-frames and specialist handling systems
- ATEX and IECEx compliant hazardous area equipment

MEP equipment is installed on offshore platforms, FPSOs, drilling rigs, LNG terminals, naval vessels and jack-up barges worldwide, including projects across Europe, the Middle East, Africa, China and South America.

A major strength of the company is its expertise in hazardous area engineering. Offshore oil and gas environments require lifting systems capable of operating safely within potentially explosive atmospheres while maintaining reliability under extreme operating conditions. MEP designs systems suitable for Zone 1 and Zone 2 hazardous areas in compliance with IIA/IIB T3/T4 gas classifications.

The company develops complete electrical and hydraulic control systems specifically for hazardous environments, integrating certified Ex-rated components including Exe junction boxes, Exd electrical panels, intrinsically safe instrumentation, gas detection systems, ultrasonic wind sensors, pressure switches and hazardous area cable systems.

Engineering and Testing

- 25,000 m² production facility
- Five dedicated test benches
- Main testing capacity up to 5,000 tonne-metres
- Full in-house testing before delivery
- Offshore installation and commissioning support

MEP's engineering team combines advanced computerised design systems with extensive offshore and marine expertise

to develop customised solutions for merchant vessels, naval ships and offshore energy projects. The company works closely with major operators and EPC contractors to ensure all equipment meets project specifications and international marine classification requirements.

Every lifting system undergoes comprehensive factory acceptance testing before delivery to ensure performance, safety and reliability. Final installation and commissioning are then completed offshore by MEP engineers.

As offshore infrastructure and LNG operations continue to expand globally, the need for safe, reliable and ATEX-compliant lifting equipment remains critical. Through its long-standing experience in hazardous area crane systems and offshore handling technology, MEP Pellegrini Marine Equipments continues to support safe operations across the global marine and energy industries.

www.offshoremarinecranes.com

MEP Pellegrini Marine Equipments

Hazardous Area Offshore Lifting & ATEX Engineering Solutions



ATEX & IECEx Electrical Panel Design



MEP Engineering & Technical Design Office



Offshore Crane Manufacturing Facility



MEP Production & Testing Plant



Hazardous Area Crane Control Systems



ATEX Offshore Crane Operator Cabin

MEP operates in offshore cranes, deck machinery, ATEX and IECEx lifting systems for hazardous and explosive environments worldwide.



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**AROUND THE CLOCK,
AGAINST THE CLOCK!**

Explosion Proof ATEX/IECEX Zone 1 / 21 iPhone 17

Introducing the ATEX iPhone 17 – Certified Communication for Hazardous Environments

Professionals working in hazardous areas no longer have to choose between safety and cutting-edge technology. The new ATEX iPhone 17 Zone 1 / 21 brings the latest Apple performance to industries where explosive atmospheres are part of daily operations.

Designed for use in ATEX Zone 1 (gas) and Zone 21 (dust) environments, the device is engineered and certified to operate safely in locations such as oil & gas facilities, chemical plants, offshore platforms, grain processing plants, and

pharmaceutical production sites. The ATEX modification ensures that the smartphone meets strict European explosion-safety requirements while preserving the full functionality users expect from the latest iPhone.

The ATEX iPhone 17 combines Apple's powerful hardware with specialized safety engineering. The device is housed in a robust protective enclosure designed to prevent ignition risks while maintaining usability in demanding industrial settings. All electrical components are carefully integrated and protected according to ATEX certification standards, ensuring safe operation in environments where flammable gases or combustible dust may be present.

Despite its ruggedized safety design, the smartphone retains the premium experience of the standard iPhone 17. Users benefit from a high-performance processor, advanced camera system, large high-resolution display, and seamless connectivity. This makes the device ideal for modern industrial workflows, including digital inspections, remote expert support, video documentation, asset management, and industrial communication apps.

The ATEX iPhone 17 is also designed for practical use in the field. The enclosure offers enhanced durability, improved grip for gloved operation, and reliable protection against dust and moisture, allowing workers to operate confidently in challenging environments. The device supports the latest enterprise mobility solutions, ensuring smooth integration into existing IT and security infrastructures.

By combining Apple innovation with certified explosion protection, the ATEX iPhone 17 provides a future-ready communication platform for hazardous industries. Workers gain access to powerful mobile technology without compromising on safety or compliance.

The result is a smartphone that enables smarter workflows, improved safety, and greater productivity in environments where reliability and certification are critical. ATEX iPhone 17 – The power of Apple technology, engineered for hazardous areas.

For more information please visit www.atexxo.com





Flexible Multi Gas Detection Designed For Everyday Industrial Safety

ION Science Ltd., a global leader in occupational gas detection solutions, presents the ARA-X4 multi gas detector, a rugged and flexible addition to its wearable gas detection portfolio designed to support safer working environments across many industries.

Developed with both reliability and ease of use in mind, ARA-X4 offers a practical solution for organisations requiring dependable multi gas monitoring in hazardous conditions. The detector supports both leaded and lead-free O₂ sensor options, features a quick-access filter for simplified maintenance, and can be configured to suit a wide

range of workplace applications.

ARA-X4 is capable of monitoring up to four gases simultaneously, including oxygen (O₂), carbon monoxide (CO), hydrogen sulphide (H₂S), hydrogen cyanide (HCN), sulphur dioxide (SO₂), and combustible gases (LEL). By delivering continuous, real-time monitoring, the detector helps businesses support compliance requirements while improving worker protection in potentially dangerous environments.

A strong focus has also been placed on user experience. The instrument features a clear 'SAFE' indicator, giving workers immediate visual reassurance when no gas hazards are detected. Additionally, its flip-screen functionality adjusts the display orientation depending on how the detector is worn, making readings easier to view throughout the working day.

ARA-X4 has also been designed to provide greater operational flexibility through its user-configurable and replaceable sensor options. Users can tailor the instrument to suit specific applications and workplace hazards by selecting the most appropriate sensor configuration, helping businesses adapt quickly to changing site requirements without needing multiple devices.

The detector also features easily accessible and replaceable filters, allowing routine maintenance to be carried out quickly and efficient-

ly. This helps minimise downtime, extend instrument lifespan and reduce disruption to daily operations. By simplifying both sensor management and maintenance, ARA-X4 offers a more practical and cost-effective approach to personal gas detection for busy industrial environments.

Additional features include a bright backlit LCD display with clear status indication, long battery life for extended operation, automatic data logging, and PC connectivity for simplified data management and compliance reporting. The detector is also backed by an industry-leading five-year warranty.

To further support day-to-day maintenance and operational efficiency, ARA-X4 is fully compatible with the ARA-X Docking Station. The docking station provides automated bump testing, calibration, and alarm verification, helping businesses reduce downtime and maintain reliable instrument performance across industries such as oil and gas, wastewater, manufacturing, petrochemical and confined space operations.

With more than 35 years of expertise in gas detection technology, ION Science continues to develop solutions focused on worker safety, reliability and ease of use. The ARA-X4 reflects this ongoing commitment, providing businesses with a dependable and user-friendly approach to wearable multi gas detection.

For more information or to talk to an expert, visit:

<https://bit.ly/4dhqYz3>





ARA-X4 Multi Gas Detector



Prioritising efficiency and user convenience, ARA-X4 delivers accurate, reliable gas detection with the ability to monitor up to four gases simultaneously, with prompt alerts to protect personnel in hazardous environments.

[Learn more about ARA-X4](#)





Connected Safety: Why Ownership And Integration Matter

In high-risk industrial environments, safety depends on visibility. Knowing where workers are, understanding the conditions they are operating in, and responding quickly when something goes wrong are fundamental to protecting people and maintaining operational integrity.

Today, connected technologies are transforming how organisations achieve this visibility. Gas detectors, wearable devices and monitoring platforms can provide real-time insights into worker safety, enabling faster decision-making and more proactive risk management.

As connected safety becomes more widely adopted, organisations are increasingly considering how these systems fit within their existing operations. Connected safety solutions can be broadly understood through two approaches: outsourced monitoring services and integrated

safety ecosystems.

Two approaches to connected safety

Connected safety solutions typically follow one of two approaches. The first relies on outsourced monitoring services. In this model, alerts and worker status updates are routed to an external monitoring centre that operates around the clock. When an incident occurs, third-party agents review the alert and escalate the issue if necessary.

The second approach centres on integrated safety ecosystems. Here, connected devices feed data directly into a unified platform used by the organisation's own safety team. Alerts, reporting and insights remain within the company's operational structure, supporting alignment with existing processes.

Both approaches aim to improve worker protection, but they are suited to different operational needs. For example, outsourced monitoring can support organisations without dedicated in-house safety teams to manage alerts at all hours or, equally, those with in-house teams working standard business hours. While integrated approaches enable organisations that have round-the-clock safety teams to handle alerts internally within their existing workflows.

Why integration and access matter

Safety teams not only respond to incidents, but also work to understand why they occur and how they can be prevented. This understanding can improve significantly with access to accurate, comprehensive data and the ability to analyse it within the context of daily operations, regardless of how alerts are managed.

It is important to consider where safety data is stored, how it is accessed, and who should act on it. Different models support different organisational needs. For example, outsourced monitoring can provide reassurance for smaller teams, while integrated approaches may suit larger organisations that can manage safety processes in-house at all hours.

An integrated approach enables safety teams to maintain direct access to the information that matters most. By connecting detection devices with safety management platforms, organisations can help keep alerts, worker data and operational insights readily available within their existing workflows.

Each approach offers different advantages depending on how safety is managed within the organisation. Where integrated systems are in place, safety teams can access and use data within their existing workflows, supporting a more proactive approach to safety management. This enables organisations to analyse patterns in exposure, identify emerging risks and refine safety procedures before problems escalate.

From monitoring to safety leadership

As industrial environments become more complex, the role of safety leaders is evolving. Today's safety teams are expected not only to respond to alarms but also to shape strategies that prevent incidents altogether.

Systems that provide a complete view of safety performance across sites and operations can help safety leaders achieve these goals. Detection technologies, monitoring platforms and reporting tools can work together to create a single source of truth that supports faster, better-informed decisions.

For this reason, many organisations are moving towards integrated safety ecosystems rather than relying solely on standalone devices or external monitoring services. When detection technologies are designed to work within a broader safety platform, they become part of a connected system that supports both immediate protection and long-term safety improvement.

Supporting the next generation of Gas Detection

For industries operating in high-risk environments, such as entering confined spaces, gas detection remains a key component of this ecosystem. Workers need reliable instruments capable of identifying hazards while also feeding data into the wider safety strategy. Modern gas detection technologies are increasingly designed with this integration in mind. By connecting detection devices with safety management platforms, organisations can gain real-time visibility into worker status and environmental conditions while also capturing valuable data for reporting and continuous improvement. Solutions such as the ALTAIR io® 6 Multi Gas Detector from MSA Safety are designed to support this ecosystem-led approach. By combining advanced multi-gas detection with seamless integration into connected safety platforms, organisations can enhance worker protection while maintaining control of their data and supporting compliance within existing safety processes. *

Looking ahead

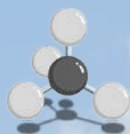
Connected safety is not simply about adding new technology to the workplace. It is about building systems that give organisations the insight and flexibility needed to protect workers effectively. As connected technologies continue to evolve, organisations will gain the greatest value from solutions that integrate easily into their operations, support streamlined compliance processes and accountability, and provide clear, actionable insights to the teams who help keep people safe.

To explore how integrated gas detection can support a connected safety ecosystem, discover more about the ALTAIR io® 6 Multi Gas Detector and the wider connected safety solutions from MSA.

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EPIT India Launches Through Strategic Industry Collaboration

Specialist Explosion Protection Training and Consultancy Company Opens Purpose-Built Training Facility in South India

E PIT India, a specialist training and consultancy company formed through a strategic partnership between Explosion Protection International Training Ltd (EPIT UK) and TUFF Offshore Energy & Engineering (India) Pvt Ltd (TUFF INDIA), has officially launched its purpose-built Explosion Protection and CompEx training facility in Tiruchirappalli, Tamil Nadu.

The launch brings together EPIT UK's internationally recognised expertise in hazardous area and Explosion Protection training with TUFF INDIA's strong industrial capabilities and regional presence to support growing demand for specialist industrial competency development across South India and surrounding regions.

EPIT India has been established to deliver specialist training, consultancy, and competency solutions for engineers and technicians working in hazardous and industrial areas, offering courses on, electrical safety, high voltage and low voltage (HV & LV), and explosion protection (Ex), including internationally recognised CompEx courses.

The new company will support engineers, technicians, supervisors, contractors, and industrial organisations operating across sectors including oil & gas, petrochemical, renewables, manufacturing, energy, EPC, offshore operations, and industrial services.

Purpose-Built Training Facility

EPIT India has opened a dedicated custom-built training facility designed specifically for practical hazardous area (Ex) training and competency development.

The facility has been developed to provide both classroom based learning and practical assessment within a realistic industrial training environment, supporting safer working practices and improved workforce competency.

EPIT India will provide:

- CompEx Certification
- IECEX Certification
- Explosion Protection (Ex) Training
- Hazardous Area Awareness
- Electrical Safety Training
- HV & LV Training
- Industrial Competency Development
- Specialist Consultancy Services

Built around real-world industrial application, the centre has been designed to support the increasing demand for qualified personnel trained to internationally recognised standards.

Supporting Industrial Growth Across South India

As industrial sectors across South India and the surrounding regions continue to expand, demand for skilled personnel continues to increase significantly.

EPIT India aims to support this growth by providing practical, internationally aligned training and consultancy services for:

- Electrical Engineers
- Instrumentation Engineers
- Maintenance Technicians
- Offshore Personnel
- Supervisors & Industrial Teams

The company will support both individual professionals seeking internationally recognised certification and organisations focused on improving workforce competency, compliance, and operational safety standards.

Centre Information

EPIT India

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India

Email: Info@epitindia.com

Website: <https://epitindia.com/>



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Breaking the efficiency ceiling in hazardous areas with ABB's IE6 SynRM Increased safety motor

Interest in hazardous area motors has never been greater. According to a report by Strategic Market Research, the total global market for all types and ratings – including low-, medium-, and high-voltage motors – had an estimated value of \$7.1 billion in 2024, and is projected to grow to \$10.4 billion by 2030. The forces behind that trajectory are converging in ways that are fundamentally changing how operators approach motor selection: tightening environmental regulations, volatile energy costs, the shift to industrial electrification, and an operational footprint expanding into remote and inaccessible environments.

Prashanth SN, Global Product Manager for IEC Low Voltage Motors at ABB, explains that the days of treating a motor specification as a routine procurement exercise are over. The right choice today carries long-term consequences for operating costs, sustainability credentials, and site safety. The wrong one can echo for decades. Introducing ABB's IE6 SynRM Increased safety motor

In response to this evolving landscape, ABB is the world's first manufacturer to offer an IE6 Hyper-Efficiency motor certified to ATEX and IECEx requirements for Zone 1 and Zone 2. Built on magnet-free synchronous reluctance (SynRM) technology, ABB's SynRM Increased safety range covers shaft heights IEC 90–315 and power ratings from 0.75 to 315 kW. First launched in 2023 in IE5 efficiency, the motors from 110 kW have now been upgraded to IE6, achieving this certification in hazardous areas for the first time.

The IE6 SynRM Increased safety motor delivers up to 60% lower energy losses than the IE3 induction motors that remain the default choice across chemicals, oil and gas, pharmaceuticals, food and beverage, and marine sectors. In industries running continuous processes around the clock, that 60% gap carries serious weight. Quantifying the lifecycle economics

The purchase price of an industrial motor accounts for only around 2% of its lifetime cost, with 1% accounting for maintenance and the remaining 97% dominated by energy usage. That ratio makes efficiency class the single most commercially significant specification parameter, yet many hazardous area installations continue to operate on IE3 motors. ABB's IE6 SynRM motor introduces a more efficient



path forwards.

The figures make a clear case. Over a standard 20-year service life – modelled at 8,760 operating hours per year, 75% average load, and an energy cost of €0.20/kWh – choosing a single 110 kW IE3 induction motor over an IE6 SynRM unit generates €87,520 in energy savings, with a payback period of just eight months and 157,540 kg of CO₂ avoided. This is the emissions equivalent of 37 petrol-powered passenger cars driven for a full year. Scale that across an installation running hundreds of motors and the aggregate impact moves from compelling to extraordinary. The International Energy Agency's Energy Efficiency 2025 report calls explicitly for sustainable technology to be made affordable. An eight-month payback on a 20-year asset makes that case on its own.

The technical case for SynRM in hazardous areas

SynRM technology operates on the principle of magnetic reluctance. The rotor contains no windings, no magnets, and no rare earth materials – yielding significant advantages in thermal performance and long-term reliability.

The absence of rotor copper losses means the SynRM motor has up to 30°C lower winding temperatures and up to 15°C lower bearing temperatures than an equivalent induction model. Lower bearing temperatures are particularly important in reducing life-cycle costs because bearing failures cause about 70% of unplanned motor outages. Cooler running also has direct implications for how the SynRM motor can be classified and deployed in explosive atmospheres.

In Zone 1, where flammable gases or vapors are likely to be present under normal operating conditions, that cooler running profile unlocks a real specification edge. Where a Flameproof motor with a special enclosure would previously have been the default choice, operators can specify an Increased safety motor – a more cost-effective installation without any compromise on certified safety.

In Zone 2 applications, the improved loadability of SynRM technology means more power from a given frame size, enabling a smaller, lower-cost motor to fulfil the same duty. For offshore installations and mobile plants – where every kilogram and every centimeter of footprint is an engineering constraint – that specification brings real operational value.

Certified for the conditions that matter

ABB's IE6 SynRM Increased safety motor carries full ATEX and IECEx certification for Zone 1 and Zone 2 applications and is certified for use with variable speed drives (VSDs). Running the motor with a VSD enables precise speed and torque control across the full operating range, including the partial-load conditions where conventional induction motors suffer their steepest efficiency penalties. For pumps, fans, and compressors running variable load profiles, that combination of VSD compatibility and IE6 efficiency is exactly what the application demands.

With protection ratings up to IP66, the motor is hardened against dust, water ingress, and environmental exposure. Temperature class compliance across both arctic and high-heat operating conditions extends the deployable envelope from LNG terminals to high-ambient chemical processing sites. The full SynRM Increased Safety motor range covers shaft heights IEC 90–315 and power range from 0.75 to 315kW – with motors up to 90kW classed as IE5 efficiency, and above 90kW as IE6 as standard.

A platform for the long term

The IE6 SynRM Increased safety motor sits within the industry's broadest portfolio of IEC LV motors for hazardous areas, spanning Increased Safety, Flameproof, and Dust Ignition Proof protection types, with induction alternatives available up to IE4. Hazardous area installations combine different zone classifications, process duties, and environmental conditions that demand a flexible, application-specific approach to specification. ABB backs that portfolio with a global service network providing lifecycle support from pre-engineering to installation, commissioning, and condition-based maintenance. For OEMs and end-users evaluating the next generation of hazardous area motors, the efficiency ceiling that previously constrained Zone 1 and Zone 2 selection has been broken. ABB's IE6 SynRM Increased safety motor delivers certified safety and a TCO case that is hard to dispute. That is ABB's 'Engineered to Outrun' philosophy, made tangible.

To find out more, please visit: <https://www.abb.com/global/en/areas/motion/campaigns/motors-for-hazardous-areas>



Explosion Prevention in Hazardous Environments: Building a Culture of Safety Through ATEX Awareness

Industrial explosions remain among the most devastating incidents that can occur within hazardous environments. While modern engineering controls, advanced equipment technologies, and comprehensive safety regulations have significantly reduced the frequency of such events, the consequences of a single explosion can still be catastrophic. Loss of life, severe injuries, environmental damage, operational disruption, and substantial financial losses continue to remind industry professionals that explosion prevention must remain a top priority.

Contrary to popular belief, industrial explosions rarely result from a single error or isolated equipment failure. Instead, they typically develop through a chain of events where hazards are underestimated, safety controls are compromised, and unsafe conditions are allowed to persist. Understanding how explosive atmospheres form and implementing robust preventive measures are therefore fundamental responsibilities for engineers working within hazardous environments.

At the heart of explosion prevention lies a simple but powerful principle. An explosion can only occur when three elements are present simultaneously. These elements are an ignition source, a flammable substance such as gas, vapour, mist, or combustible dust, and sufficient oxygen within the atmosphere. This relationship is commonly referred to as the fire triangle or explosion triangle.

The significance of this concept cannot be overstated. If engineers can effectively control or eliminate any one of these three elements, the conditions required for an explosion no longer exist. This forms the foundation of hazardous area management and underpins the principles of ATEX compliance throughout Europe and many international industries.

ATEX is often associated with equipment certification and product markings. However, limiting its importance to equipment selection alone overlooks its broader purpose. ATEX represents a systematic approach to identifying potentially explosive atmospheres, assessing risks, controlling ignition sources, and ensuring safe operational practices throughout the lifecycle of a facility.

Numerous industrial sectors operate under conditions where explosive atmospheres may develop. Oil and gas facilities routinely handle highly flammable hydrocarbons. Refineries and tank farms store and process volatile liquids that can release combustible vapours. Chemical processing plants frequently work with reactive substances and solvents. Paint and coating operations generate flammable atmospheres through the use of solvents and aerosols. Pharmaceutical production can involve combustible powders, while grain handling and food processing facilities face significant risks from combustible dust accumulation. Mining and mineral processing operations present additional challenges where dusts, gases, and confined environments can combine to create hazardous conditions.

Despite the diversity of these industries, investigations into major industrial incidents often reveal remarkably similar underlying causes. One of the most common failures is incorrect hazardous area classification. When engineers underestimate the likelihood or duration of explosive atmospheres, inappropriate equipment may be installed, creating unnecessary ignition risks.

The use of non certified electrical or mechanical equipment remains another recurring factor in explosion incidents. Equipment not specifically designed for hazardous environments can generate sparks, excessive temperatures, or electrical faults capable of igniting flammable substances.

Static electricity continues to present a significant challenge across many industries. The transfer of liquids, powders, and granular materials can generate electrostatic charges that accumulate over time. Without adequate grounding and bonding arrangements, these charges may discharge suddenly and provide sufficient energy to ignite an explosive atmosphere.

Maintenance deficiencies also feature prominently in incident reports. Safety systems that are not regularly inspected or tested may fail when required most. Damaged cable glands, deteriorated seals, corroded enclosures, and malfunctioning instrumentation can all



compromise explosion protection measures.

Hot work activities remain another significant source of risk. Welding, grinding, cutting, and other maintenance tasks can introduce ignition sources into areas where flammable substances may be present. Without rigorous permit to work procedures and effective gas monitoring, routine maintenance activities can rapidly escalate into major incidents.

Human factors must also be considered. Workforce competency plays a critical role in maintaining safety standards. Personnel who lack adequate training may fail to recognise hazards, misunderstand area classifications, or overlook critical control measures. Similarly, organisations with weak safety cultures may inadvertently encourage shortcuts that increase operational risk.

Combustible dust hazards deserve particular attention. Historically, many organisations focused primarily on gas and vapour hazards while underestimating the dangers associated with dust explosions. Industries handling grain, flour, sugar, wood, plastics, pharmaceuticals, and metal powders have experienced numerous incidents where accumulated dust became airborne and ignited, producing devastating secondary explosions.

Effective explosion prevention requires far more than documented procedures. Success depends upon consistent implementation, operational discipline, and a proactive commitment to safety at every level of an organisation.

Certified ATEX and IECEx equipment forms an essential component of any hazardous area strategy. Engineers must ensure that equipment selection aligns with the specific zone classification and environmental conditions in which it will operate. Installation practices must also meet the relevant standards to preserve equipment integrity and maintain certification requirements.

Grounding and bonding systems should be carefully designed, routinely inspected, and continuously maintained. These measures provide critical protection against electrostatic discharge and are particularly important in operations involving the transfer of flammable liquids and powders.

Reliable gas detection systems provide another vital layer of defence. Continuous monitoring can identify hazardous atmospheres before they reach dangerous concentrations, enabling operators to take corrective action before ignition becomes possible.

Routine inspection and integrity management programmes are equally important. Equipment deterioration is inevitable over time, making regular inspections essential for identifying defects before they compromise safety performance.

Perhaps most importantly, organisations must invest in workforce training and awareness. Every individual working within hazardous environments should understand the risks associated with explosive atmospheres and recognise their role in preventing incidents. Safety awareness must extend beyond compliance and become embedded within daily operations.

Before commencing any work in a hazardous area, engineers and supervisors should verify that the hazardous zone has been correctly identified, that all equipment is suitable for the classification, that potential ignition sources have been controlled, and that static protection measures are functioning correctly. Personnel should be appropriately trained and authorised, while emergency response systems must be fully operational and readily available.

The consequences of overlooking even seemingly minor details can be severe. Industrial explosions can result in fatalities, life changing injuries, fire escalation, environmental contamination, extended production shutdowns, regulatory enforcement actions, and lasting reputational damage.

For engineers, safety professionals, and operational leaders, the objective should never be limited to incident response. The true goal is preventing the conditions that allow incidents to develop in the first place. Achieving this requires vigilance, leadership, and a culture where safety considerations influence every operational decision.

Explosion prevention begins with awareness. Awareness must evolve into disciplined action. Over time, that discipline becomes an integral part of organisational culture. When safety culture is strong, hazardous environments can be managed effectively, risks can be reduced significantly, and the likelihood of catastrophic events can be minimised.

In an industry where the consequences of failure are so severe, maintaining this commitment is not simply good practice. It is an essential responsibility shared by everyone working within hazardous environments. Thinking ATEX, acting safely, and continuously striving to prevent explosions remains the most effective path towards protecting people, assets, and operations.

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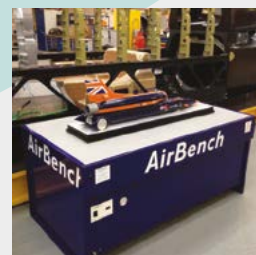


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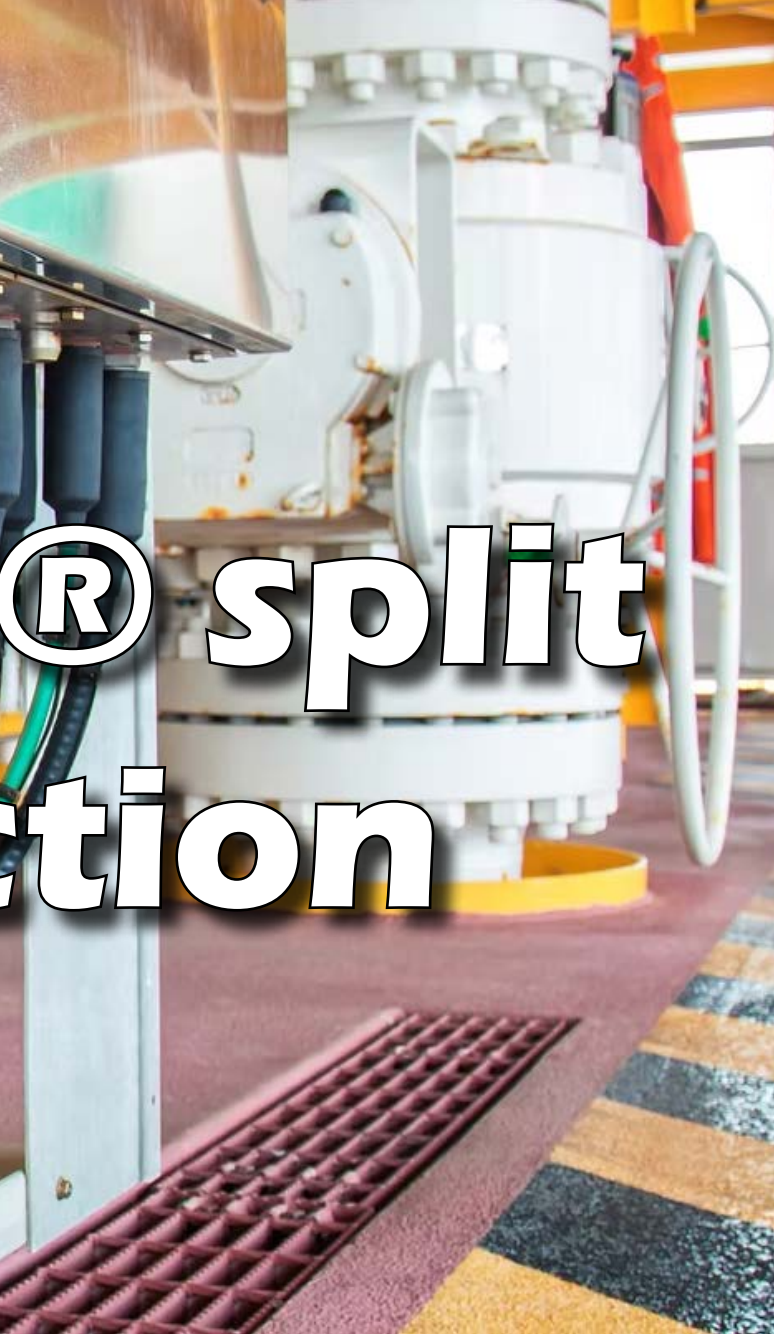
The result is a highly cost-effective maintenance solution that minimises downtime and operational disruption. In live or critical systems—disconnecting and re-terminating cables can introduce unnecessary hazards and extended outages. The RetroSeal® split washer eliminates this requirement, allowing technicians to restore or

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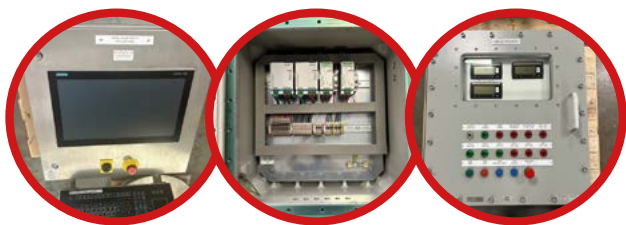




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atmosphere

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