



# Hazardous Area Inspections – Commitment vs Compliance

**E**lectrical equipment installed in potentially explosive atmospheres possess special features that render them safe for such hazardous environments.

In most cases, only ATEX certified equipment can be used, equipment that has been designed, built and installed in accordance with well-known protection concepts such as:

- Flameproof Ex d – strong enough to withstand an internal explosion
- Increased Safety Ex e – where the risk of sparks and hot surfaces are managed by design and installation techniques
- Intrinsic Safety Ex i – where the energy in the circuit is carefully managed below that required to ignite a gas, vapour or dust cloud

So critical are these special protection features in reducing the risk of an explosion, that a 'run-to-failure' maintenance strategy is not an option!

Regular ongoing Inspection and Repair is an *essential* activity that must be carried out to ensure the integrity of those special features is maintained for the *life* of the asset.

BS EN IEC 60079-17:2024 requires that equipment installed in Hazardous Areas is inspected at frequencies of no less than once every three years, it provides Inspection Schedules to ensure a consistent approach to Inspections, and offers three *grades* of inspections that might be carried out:

- Visual – where the Inspector is limited to just looking at the item;
- Close – where tools and access equipment can be used to check for tightness; and
- Detailed - which usually requires electrical isolation to open the enclosure to fully inspect the item *internally* as well as externally.

In such a heavily regulated industry, having a consistent approach to

Hazardous Area Inspections is key to success, but all too often, Hazardous Area Inspections are considered to be *costly*, having *zero rate of return*, or *unmanageable* due to a lack of skilled personnel who, quite frankly, could be better utilised elsewhere.

As a result, Hazardous Area Inspections are sometimes overlooked, or when budgets become tight, are 'put on hold', only to be re-invigorated following a visit from the regulator! This sawtooth approach to inspections serves only to compound the issue – the effort and cost associated with re-establishing an Inspection Program after years of neglect should not be under-estimated!

However costly or difficult to manage, Hazardous Area Inspections are non-negotiable, and a matter of regulatory compliance. The cost of Inspections should be included along with other Compliance activities, with Inspection and Repair budgets 'ring-fenced' year on



year. If an organisation lacks the internal skilled resources necessary, this can be overcome by outsourcing the activities to a specialist Inspection company which employs dedicated, highly skilled Inspectors, with a proven track record of delivering Hazardous Area Inspection Services across a diverse range of industries.

In addition to the possibility of getting into hot water with the regulator, failure to undertake Hazardous Area Inspections at an appropriate frequency, leads to equipment being left unchecked, degrading over time, thereby increasing the likelihood of an ignition capable situation arising. However unlikely an explosion at your site might seem, the longer an inspection program is put on hold, the more likely an explosion becomes. Whether or not this is seen as credible, what you can be sure of is when the Inspection program is eventually re-started, the equipment failure rate will be very high. Faults that would have otherwise been found and repaired in a well-planned and co-ordinated manner, will be revealed in the first Inspection Cycle, potentially swamping the Responsible Person and maintenance department with a deluge of faults to repair, any one of which could lead to an explosion. If you do find yourself in

such a position, don't panic! Help is at hand in the form of the CompEx14 Responsible Person's course, which can be undertaken at approved training centres across the UK.

In addition to providing guidance with respect to the most appropriate Inspection Strategy for your site by 'intelligent' use of the different grades of periodic inspections, mixed in with targeted sample inspections, the CompEx14 Responsible Person's course introduces an absolute nugget in the form of a 'Remedial Repair Prioritisation Tool'.

Based on six sigma 'style' methodologies, the technique identifies key criteria that can be weighted to ensure all faults are prioritised according to how critical the fault is, in terms of its likelihood of becoming a *credible* ignition source, allowing your repair teams to cut through the noise and remedy the most critical faults first, and in a timely fashion. Criteria such as the zone, the protection concept of the equipment, environmental factors, the type of fault and the location of the site are taken into consideration. When automated into a database (or dedicated inspection software) it can deliver an instant and manageable Remedial Repair Priority list – an invaluable tool for the Responsible Person faced with a

seemingly impossible task!

Further information on the requirements for ATEX Inspections can be found in the recently updated standard BS EN IEC 60079-17:2024, which has done away with the term 'Responsible Person', in favour of 'Executive Person with Technical Function', not quite as 'snappy' a job title for business cards and email salutations, but I'm sure we'll get used to it in time. ■

#### About the author



**Tal Hopkins** is Technical Director at C&P Engineering Services Ltd and has over 30 years' experience working in Hazardous Areas. In addition to delivering the CompEx12 Design Engineer's Course at C&P's Swansea Training Centre, Tal is Principal EC&I Engineer, heading up C&P' Design Engineering Department.