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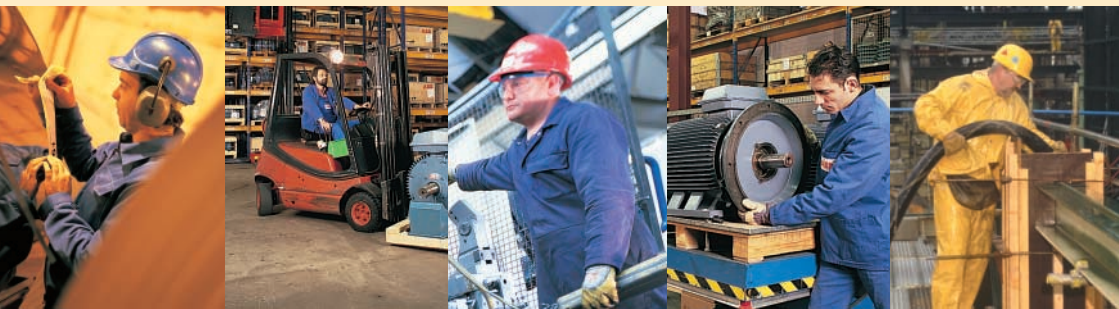
DON'T:

ATEX 137

What it means for motor users

ABB

ATEX puts responsibility for explosion protection firmly in the lap of the end user, who is responsible for the safe operation of all the equipment on his site. ATEX is in force since July 2003. In the UK, this European directive is implemented through DSEAR, The Dangerous Substances and Explosive Atmospheres Regulations.



Understand your responsibilities

The ATEX Directives are designed to protect employees, the public and the environment from accidents owing to explosive atmospheres. ATEX 95 (also referred to as ATEX 100) covers the responsibilities of manufacturers to supply equipment offering varying degrees of protection to suit a particular level of hazard. ATEX 137 (also referred to as ATEX 118) covers the responsibilities of end users to prevent accidents due to hazardous atmosphere occurring on their premises.

Under ATEX, it's crucial to realise that the only parties responsible for

preventing accidents owing to explosive atmospheres are equipment manufacturers and end users. No one else can be responsible.



When it comes to the safety of the plant, the end user alone is responsible, even if services are contracted out to someone else. Outsourcing is allowed, but as the employer, you must be competent to check the quality of the work carried out on your behalf, because the buck stops with you.

Penalties for breaches can be severe and can include prison sentences.

DO: Ensure that you understand the procedure of the work carried out by third parties and that you can judge its quality.

DO NOT: Assume that contractors know what they are doing and that everything will be all right.

Are you covered?

With the introduction of ATEX, more industries than ever are required to protect themselves against potential explosions, alongside the sectors commonly associated with these types of hazards such as oil, gas and chemicals.



This is because there is more emphasis on explosive dusts under ATEX than in previous legislation. Sulphur and coal may be obvious candidates, but bulk products such as cereals, milk powder, flour or animal feed also cause combustible dust. This means that many premises, which may not have fallen under previous legislation, are now covered by ATEX.

DO: Check if combustible dust forms in clouds or layers anywhere on your site.

DON'T: Put off the assessment of dust hazards because you are not used to dealing with the issue.

Appoint a safety manager

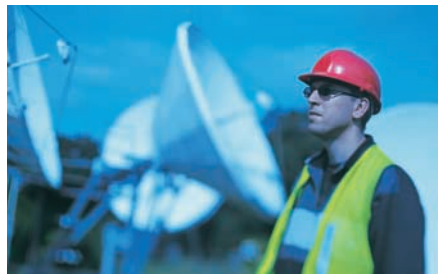
If your premises falls under ATEX, the first step is to appoint someone to take responsibility for implementing the directive.

According to ATEX, the safety manager of a plant is personally responsible for protecting the workforce in case of an accident arising from a hazardous atmosphere. This is a new development in the UK, where personal responsibility was previously apportioned only after investigations had taken place.

The safety manager must have a proven track record in the plant to show that he is competent to take on the responsibility, so he will often already be in a senior position, such as process

manager. The plant manager will automatically assume personal responsibility for explosion safety if no separate safety manager is appointed.

It is important to note that personal responsibility can lead to penalties, including imprisonment in severe cases, following an accident.



DO: Appoint a safety manager.

DON'T: Try to avoid responsibility by not appointing a safety manager. If there is no safety manager, the plant manager automatically becomes responsible.

Assess the risk

Employers' obligations under ATEX begin with an assessment of the site's hazards and likely sources of ignition. Carry out a preliminary risk assessment on the sources of ignition - such as electrical and mechanical equipment - and types of explosive materials - both gases and dust - around the plant.

The risk analysis must include any motors that were already in use before July 1st 2003. They need to conform to minimum requirements under ATEX and this means that the equipment history

must be traced. Companies with good maintenance records should be in the clear, but it's the end user's responsibility to show that the equipment is safe.

If you can't provide proof that a motor meets minimum requirements under ATEX, you'll have to replace it. For example, if the nameplate or maintenance records are missing. The directive allows no extra time to prove the safety of older installed equipment.



DO: Urgently carry out a risk assessment of all motor applications in hazardous areas, if you have not done so already.

DON'T: Delay the risk assessment. This should already have been complete by 30 June 2003.

Reduce the risk

Once you've assessed the risk, eliminate it as much as possible. Getting rid of ignition sources, reducing the inventory of hazardous substances or replacing them with less dangerous alternatives

could all make the hazardous area smaller, reducing the risk and saving money. Refer to European standard EN 1127-1:1998 to find out how to carry out a risk assessment.

DO: Reduce risks by cutting or eliminating any sources of hazard.

DON'T: Let infrequently used flammable substances make your hazardous area unnecessarily large.

Write it down



You must now produce an Explosion Protection Document (EPD) to show that you've assessed the explosion risk. This should be no more than 3-4 pages and should refer to any existing safety management documents, such as maintenance records. The purpose is to explain how the plant will respond during normal operations as well as in case of an emergency. The deadline for existing workplaces is 30th June 2006, but whenever modification, extension or revamping takes place, the Explosion Protection Document is due immediately.

Define your zones

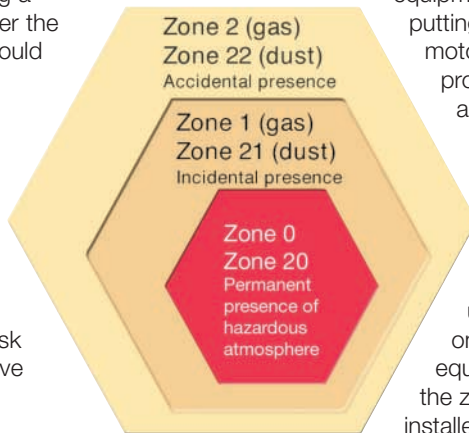
ATEX divides plants up into zones according to the level of risk. Where explosive atmospheres occur briefly and infrequently, the area is Zone 2 for gases, vapours and mists or Zone 22 for dusts. Zones 1 and 21 cover areas where explosive atmospheres are likely to occur some of the time, while Zone 0 and Zone 20 are reserved for areas where explosive hazards are present most or all of the time.

Don't skimp on the zoning

It may be tempting to try and simplify the process by using a blanket zone to cover the entire site but this could be a mistake.

Over-protected equipment will have to be bought, installed and inspected and blanket zoning also raises a suspicion that the risk analysis may not have been carried out in sufficient detail.

Worse still, the use of over-specified equipment - such as putting a category 2 motor equipped with protection for Zone 1 applications into Zone 2 - can have long-term financial implications, because the maintenance and repair obligations under ATEX depend on the category of equipment, rather than the zone in which it's installed.



DO: Carry out a detailed zoning exercise

DON'T: Use a blanket zone to cover the entire site regardless of need

Choosing new motors

Any equipment installed in a hazardous area since July 1st 2003 must be supplied with ATEX 95 certification. Under the ATEX directives, equipment is

defined by the type of potentially explosive atmosphere in which it may be used - Group 1 for underground mines and Group 2 for surface industries.

Category	Degree of Safety	Design Requirement	Expected Zone of Use
1	Very high level of safety	Two independent means of protection or safe with two separate faults	Zone 0 Zone 20
2	High level of safety	Safe with frequently occurring disturbances or with one operating fault	Zone 1 Zone 21
3	Safe in normal operation	Where explosive atmospheres are likely to occur infrequently and be of short duration	Zone 2 Zone 22

Definitions

Non-sparking, Category 3 equipment for Zone 2

The lowest level of accepted explosion protection in the EU is non-sparking, in which the equipment is designed to prevent an internal malfunction from creating sparks in normal operation.

Increased safety, Category 2 equipment for Zone 1

Increased safety motors prevent sparks, arcs or hot spots during service by a number of design provisions, and by the use of special protection devices.

Flameproof, Category 2 equipment for Zone 1

The enclosure of this motor type will prevent an internal explosion or flame from being transmitted to the explosive

atmosphere surrounding the machine. The enclosure must withstand the pressure levels that may be caused by an internal explosion.

Pressurised, Category 2 equipment for Zone 1

Mostly used for high voltage motors, the protection is provided by the injection of an inert gas into the frame of the motor.

Dust Ignition Proof, Categories 2 and 3 for Zones 21 and 22

Motors for hazardous dust conditions are known as Dust Ignition Proof or DIP motors. Used in atmospheres where explosive dust surrounds the motor, or where dust settles under its own weight on the motor.

What about motors in Zones 0 and 20?

No motors are permitted in these most hazardous areas.

DO: Select a correctly specified motor in cooperation with your motor supplier.

DON'T: Err on the side of caution and get an overspecified motor.

Check the paperwork

To check that a motor is approved to the appropriate directive, look for the directive number that appears in the EC Declaration of Conformity, which must be delivered with the motor; it can also be on the name plate. ATEX 95 is designated 94/9/EC. With this document the manufacturer takes responsibility for the product's compliance. Depending on the zone where the product will be used, the number of the Notified Body that has approved it may also be stamped after the CE mark. A Notified Body is an

independent laboratory authorised to approve products for use within the European Union. Equipment for Zone 2 applications may be self-certified by the manufacturer, but equipment for use in Zone 1 or Zone 21 must be certified by a Notified Body. Also check the EC Type Examination Certificate and the Product Quality Assessment Notification. These can be issued only by a Notified Body and describe in more detail the equipment and for which applications it has been tested and certified.

DO: Pay attention to the EC Declaration of Conformity.

DON'T: Risk using equipment that may not have the necessary approval.

Maintenance issues

The manufacturer's ATEX 95 certification will become invalid if maintenance, such as rewinding of a motor, is carried out outside the manufacturer's control. Responsibility for the safety of the equipment will then revert to the end user.

However, some manufacturers are now prepared to take the same responsibility for repaired and rewind motors as they do for new motors.

This ensures that the motor remains approved to ATEX 95 after a repair, provided the work is carried out at an approved workshop.



DO: Make sure you know how the maintenance will be carried out.

DON'T: Assume that your local rewind shop will be able to carry out any repairs.

**ABB ATEX approved motors
- the responsible choice**

For further information call the Brochureline

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