

# ATEX fans – an explosive issue

**Outside of major users such as chemical, petrochemical and similar process industries, enquiries for flameproof fans tend to come from specifiers, resellers and end-users, many of whom may not be aware of ATEX Directives.**

Everyone involved in the specification, manufacture, installation, and use of equipment in flameproof zones bears some degree of responsibility towards ensuring that the law concerning flameproof equipment is upheld. It may be worth pointing-out that company chief executives are particularly exposed in this respect and could face imprisonment for a serious non-compliance.

This brings us to the purpose of this article which is to highlight some of the issues affecting manufacturers and distributors of ATEX fans. Unfortunately, a lack of practice with the subject tends to give rise to enquiries that begin with statements like “there is a slight risk of explosion, but we don’t think we need a flameproof fan” which places manufacturers in an awkward position

because they are not ATEX consultants and are not qualified to know what the client can lawfully install.

So, what can the fan supplier do with casual enquiries that must at some point turn into tightly specified orders? The first option is a blunt “come back when you know exactly what is required” and the second is to issue a questionnaire, usually with ‘tick boxes’ and a bit of guidance appended, which may then be returned with conflicting selections.

What is needed in every case is an ATEX code that provides a well-defined minimum standard for the product that is required. For example, the code Ex II 2G IIC T4 essentially means European flameproof, surface industry (not mining), Category 2 (Zone 1), gas group II, type C (hydrogen or acetylene gas), maximum surface temperature 135°C. There are many other coding permutations including slightly different formats for dusty atmospheres (Zones 21 & 22). If codes cannot be provided there is lingering uncertainty over what is required.

Once an ATEX code has been established by the end-user, the process of selecting a fan model and its essential features demands a degree of application knowledge. For example, the type of electrical supply is important. Often the response to “what electrical supply do you have?” is “it can be single or three phase”. Single phase is an expensive option and not widely available from ATEX motor manufacturers. It may be cheaper to run a three-phase line than to buy a single-phase fan on a long manufacturing lead-time.

Any fan motor that is to be speed controlled with a VSD must also have thermistors fitted to protect against motor shell temperature at low speeds causing spontaneous gas combustion. By not mentioning the VSD aspect at the enquiry or order stage the purchaser is likely to ultimately face time and product replacement costs.

There are other matters largely in the hands of the manufacturer. High amongst them being the choice of electric motor. Motors vary from the most secure

specification EEx d (explosion proof) through EEx e (increased safety), down to EEx nA (non-sparking) which has many similarities to a standard non-flameproof motor.

Once the fans have been correctly specified and manufactured there is the question of competency on the part of the installation engineer. Clearly this responsibility should be in the hands

of someone who is totally familiar with electrical and mechanical aspects of flameproof equipment, as defined in the latest versions of IEC 60079 Parts 14 & 17 for example, otherwise, some disastrous decisions could be made that render the fan non-flameproof or compromise the overall installation.

ATEX must be understood as being an ever-evolving subject requiring

competence and training that is now provided by several UK Notified Bodies and consultancies. Anyone requiring a better understanding of flameproof requirements would be advised to contact them for further information. ■

#### About the author



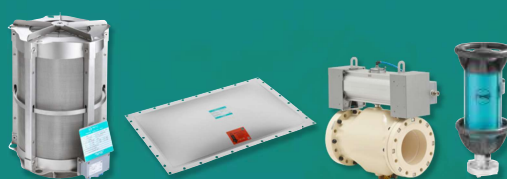
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