Press Release

VDMA Air Handling Technology
Fans explosion-proof and safe

Frankfurt, August 28, 2020 - Gunther Müller is managing partner of Helios Ventilatoren GmbH + Co KG and a member of the VDMA industrial fans working group. In an interview with Astrid Thieme-Medinger, the graduate engineer answers questions about the VDMA Directive relating to fans (2020-06) "ATEX Guideline Fans - Necessary steps to an operationally safe fan", which has been published by the Air Handling Technology Association.

Mr. Müller, the Industrial Fans Working Group of the VDMA is the publisher of the new ATEX guide "Necessary steps to an operationally safe fan". What prompted the group of experts to produce this directive?

Explosion protection is a complex and safety-relevant topic. If a plant is not designed correctly, in the worst case there is danger to life and limb. In practice, there is often ignorance or uncertainty in the design. We have recognised the need for information of all parties involved and, in the VDMA working group, we have thought about how this topic can be made more transparent and how it can be implemented more safely. The committee had decided to deal with the topic and decided to develop an ATEX guideline.

The ATEX Guideline Fans provides guidance and assistance for the application and practical implementation of the legislation. It also facilitates the dialogue between manufacturers and customers and makes it clear that tasks lie with both the client and the contractor.

The information sheet raises awareness. It provides guidance as to which steps and considerations have to be taken by the respective parties involved when designing a plant.
Preventive and plant-related explosion protection is regulated in Europe by legal provisions. Which directives are concerned?

EU legislation may at first sight appear somewhat confusing. There are two directives for explosion protection.

Relevant for the manufacturers of fans is the ATEX Directive 2014/34/EU, which is implemented in Germany in the 11th ProdSV - Explosion Protection Products Regulation. The aim of the product directive is the protection of persons working in potentially explosive atmospheres, i.e. the operating personnel. An important part of preventive explosion protection is the avoidance of accidents by identifying sources of danger. This applies in particular to ignition hazards which may be caused by products and the identification of protective measures. It is therefore a matter of the so-called requirements for properties.

The ATEX Directive 1999/92/EC is relevant for the user, i.e. operator, and is implemented by the Industrial Safety Regulation and the Ordinance on Hazardous Substances.

The primary objective of the Operating Directive is to define minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres. The Operating Directive requires a risk analysis of the specific operating conditions. It also regulates the behaviour of workers and the handling of products.

A good thing is that the quality requirements to be met by manufacturers are identical throughout the EU and in the EFTA states. This means that they allow unhindered movement of goods within the EU.

Operational requirements, in turn, can vary from country to country and must therefore be examined on a country-specific basis.

Thus, there are both operator and manufacturer obligations to comply with all legal bases. What are these obligations for the individual?

The most important operator obligation arising from the ATEX Operation Directive is the risk assessment of the plant. In addition to the preparation of an explosion protection document and the designation of areas with hazardous, explosive atmospheres - the so-called zone definition - the temperature classes must be determined and named.

Fans may only be used in potentially explosive environments according to ATEX or convey explosive atmospheres if they are designed for the
corresponding equipment category. This, in turn, is the most important manufacturer's obligation: to ensure compliance with the designated and required equipment category, in line with the operator's zone definition.

**Are the respective responsibilities clearly defined?**

Yes, these are clearly regulated and assigned to the individual participants. The ATEX Guideline Fans names the respective responsible persons and the specifications to be made in great detail. It thus provides optimum support for manufacturers, specialist planners and also operators. In addition, the guideline sensitises the participants with regard to their tasks and obligations towards the others and thus supports the joint coordination.

**Why is it so important in the planning and implementation process that both building owners and planners as well as suppliers of explosion-proof components make their specific information contributions?**

Only a correctly designed and executed plant minimises potential risks during operation later on. Without the operator's assessment of his operating conditions and the resulting specifications, it is not possible for the fan manufacturer to supply the appropriate ATEX unit.

**And do those involved always fulfil their tasks and duties? In other words - are all the details given to ensure that finally safe plants can be realised?**

According to reports from practice, we can usually answer in the affirmative. However, it can also happen that both operators and specialist planners "struggle". The causes and motivations for this can only be guessed at. In general, the complexity of the topic and knowledge deficits are probably the reasons. This is why the new ATEX guide is so important.

**What does an optimal and legally compliant and standard-compliant concept for operationally safe plants look like?**

Each party involved must be aware of the project-specific hazard situations and their consequences in case of plant failure. Taking responsibility and dealing with it in a legally compliant manner - for the benefit of all - is the motto. "Closing your eyes and going through it" does not help here, the risk potentials of explosive media are too great for that. The regulations on ATEX are structured and therefore tasks and responsibilities are clearly regulated. If
everyone involved makes their own contribution and brings in and implements their technical strengths, even challenging projects such as ATEX projects will succeed. The ATEX guide of the Industrial Fans working group focuses and briefly explains the points that operators, specialist planners and manufacturers of ATEX fans need to know and take into account.

The VDMA fan information (2020-06) „ATEX-Leitfaden Ventilatoren - Erforderliche Schritte zum betriebssicheren Ventilator“ is available for download at https://klt.vdma.org/..  (German version only)

Do you have any further questions? Dr. Thomas Schräder, VDMA General Air Technology, phone 069 6603 1227, thomas.schraeder@vdma.org will be happy to answer them.

The VDMA represents around 3300 German and European companies in the mechanical and plant engineering sector. The industry stands for innovation, export orientation, medium-sized companies and employs around four million people in Europe, more than one million of them in Germany alone.

The Air Handling Technology Association comprises the departments Air Conditioning and Ventilation Technology (Process air as well as Ventilation and air conditioning), Refrigeration and Heat Pump Technology, Air Pollution Control (Process air), Surface Technology and Drying Technology.

The Industrial Fans working group in the Air Conditioning and Ventilation Technology department is a grouping of leading German manufacturers of fans for industrial applications. Regardless of their role as competitors in the market, the member companies take up current and long-term topics, discuss them, work out solutions and offer assistance. These include eco-design with the focus on energy efficiency of fans and fan systems, explosion protection and machine safety as well as digital transformation with the aspects IoT, Industry 4.0 and open data communication based on OPC UA.