



Protecting people and equipment from explosions: IEC Technical Committee 31

Martin Thedens is the Chair of IEC Technical Committee 31: Equipment for explosive atmospheres. The Technical Committee publishes safety standards relating to equipment used in hazardous areas, where flammable liquids, vapours, gases or dusts are likely to occur in quantities sufficient to cause an explosion.

Many of these standards serve as a basis to IECEx, the IEC System for Certification to Standards relating to Equipment for Use in Explosive Atmospheres. IECEx assesses the conformity of equipment to International Standards such as the IEC 60079 series, which includes many parts, starting with Part



0 which specifies the general requirements for Ex equipment used in explosive atmospheres.

Martin Thedens won the IEC 1906 award in 2012, which is granted in recognition of exceptional recent individual achievements in helping to advance IEC activities in a significant way. He is also an expert in pre-normative research work, especially for electrostatics and ignition by optical radiation, high frequency or mechanical sparks. After being a convenor for several working groups inside TC 31, he has recently been nominated Chair of the committee, while at the same time chairing the German mirror committee DKE/K 241.

In this interview, Martin discusses IEC TC 31 as it continues its busy work despite the difficulties linked to the COVID-19 pandemic.

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How was TC 31 affected by COVID-19 in 2020?

There were a few remote meetings with some subcommittees, project and maintenance groups where the discussions were a bit difficult, especially at the beginning of the pandemic. People had to get used to online meetings and the different time zones were a real problem we had to deal with. Despite all of that, our work was not really affected. We released several publications, including IEC 60079-10-1, which is a new proposition from the IEC, a commented version (CMV) of the standard.

This new edition concerns the classification

of explosive areas, where an explosion might occur due the possible presence of flammable gas or vapour. We have already been using a similar system in our standards process for some time, to explain the changes we include in our publications. In our existing process, we inform manufacturers who might use our standards whether the document represents a major technical change, just an editorial change or an extension of the standard. We include this information in the foreword of our publications. Implementing the CMV was therefore not too difficult for us. It is a more systematic and global tool, which enables users to really understand the principles that guide a publication and changes to the previous edition.

Can you explain how TC 31 works with other IEC Technical Committees?

Our aim is for our standards to be seen and used as horizontal publications across the IEC. We are working on a Basic Safety Publication, which has been accepted by the IEC Advisory Committee on Safety (ACOS), and which will serve as a guide for all IEC TCs. We have also set up several joint working groups, which enable us to work very well with many TCs. For instance, with TC 18, which develops standards for electric installations onboard ships and mobile and fixed offshore units. Another example is the setting up of a joint maintenance group with a subcommittee of TC 61 which prepares standards for the safety of household appliances. We work together on the maintenance of IEC 62784 and the specifications for vacuum cleaners and dust extractors for use in explosive atmospheres.

How does TC 31 work with IECEx?

The previous Chair of TC 31, Mark Coppler, established a formal liaison between IEC TC 31 and IECEx, and this very important step was the reason he received the Thomas Edison Award in 2020. IECEx can assign people to our working groups and each decision sheet issued by IECEx is examined in TC 31, so that we can ensure that it is written in conformity to our standards. We also take IECEx demands for updates as well as requirements for new standards

into account. For instance, conformity assessment experts require a standard for the IECEx Scheme for Certification of Personnel Competencies. We are currently working on the third committee draft of IEC 60079-44. The document aims to identify the minimum level of knowledge and skills required to work in hazardous areas and the specific competence required for work associated with equipment for explosive atmospheres.

What new areas are of interest to IEC TC 31?

Hydrogen is an interesting topic we are looking into. There are so many different aspects that can be covered by standards. We have a liaison with ISO on hydrogen but it is not really active. We plan to activate it. Hydrogen is a very dangerous substance that can be ignited by a spark and the required ignition energy is very, very low. One topic we need to explore is conditions for storage and distribution. Just to give you an example, it is often said that hydrogen could be delivered just by using the natural gas pipelines. In our view that is impossible without implementing several technical changes as the safety requirements for natural gas are very different. This is where TC 31 could step in and prepare standards. ■

(This article originally appeared on the e-tech website and is re-published here with kind permission)



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