



# IECEx-certification of explosion-protected electrical equipment



**IECEx is a voluntary certification system that facilitates global trade of explosion-protected electrical equipment (Ex equipment).**

**The IECEx system covers electrical equipment complying with IEC standards, for hazardous areas with explosive gas atmospheres (zone 0, 1 and 2) and for hazardous areas with explosive dust atmospheres (zone 20, 21 and 22).**

#### **Type of protection and standards**

Examples of different types of explosion protection for electrical equipment:

- TYPE OF PROTECTION - GLOBAL STANDARD (IEC)**
- Ex d - flameproof enclosure** - IEC 60079-1
- Ex p - pressurized enclosure** - IEC 60079-2
- Ex q - powder filling** - IEC 60079-5
- Ex o - liquid immersion** - IEC 60079-6
- Ex e - increased safety** - IEC 60079-7
- Ex ia/ib - intrinsic safety** - IEC 60079-11
- Ex n - non incandive** - IEC 60079-15
- Ex m - encapsulation** - IEC 60079-18
- Ex t - dust ignition protection by enclosure** - IEC 60079-31

The standards are applied together with IEC 60079-0, which sets out general Ex requirements.

#### **Certification services**

SP can assist with the following certification services in accordance with SP's Certification Rules SPCR 154:

##### **a) IECEx Certificate of Conformity (CoC)**

To receive such a certificate, an ExTR (report) in accordance with b), and a QAR (report) in accordance with c), below are required.

##### **b) IECEx Test Report (ExTR)**

SP can issue an ExTR after successful type examination in accordance with IEC standards.

##### **c) IECEx Quality Assessment Report (QAR)**

SP can issue a QAR after successful assessment of the quality system in accordance with IECEx requirements.

#### **How long does certification take?**

##### **CoC**

Certification for a CoC normally takes 6-8 weeks after ordering and after complete documentation (ExTR and QAR) has been received. If SP has performed the examination for the ExTR and QAR, certification for CoC normally takes 2-3 weeks after issue of the reports.

##### **ExTR & QAR**

The time taken for issue of an ExTR or QAR depends among others on the extent of necessary assessments and on the amount of work in hand. In the case of non-conformities, additional time will be needed for the manufacturer to deal with the non-conformities and for re-assessment. After successful assessment, the certification procedure normally takes 2-3 weeks before issue of an ExTR or a QAR.

## Ordering

Advisory services (focused on information concerning provisions and requirements of standards), type examination, assessment of quality system or certification should normally be ordered in writing. Certification work must be ordered in accordance with SP's Certification Rules SPCR 154.

For type examination, SP requires the necessary number of test samples and documentation (design documents, user instructions etc.) according to the IEC standards applied in the design of the Ex protection.

According to the standards, the design shall be documented in an unambiguously and complete way with respect to aspects related to the explosion protection. If the standards permit alternatives, the order must specify the desired alternatives.

## Secrecy and advisory services

SP applies secrecy as set out in SP's Certification Rules SPCR 154.

SP's secrecy standards and its impartial role mean that, when providing advisory services focused on information on provisions and requirements of the standards, SP cannot utilize any information that it may possess concerning design features of products from other customers. Further, as an independent third party, SP cannot act as a designer, which limits its ability to provide detailed advice on design features, choice of components etc.

Advisory services can also include training or preliminary examination covering limited parts of a design or standard, subject to the reservation that further aspects may be found during the more systematic and comprehensive type examination.

## Costs, terms and conditions

The cost of a commission can be based on either time billing or a fixed price, depending on requirements and possibilities. Progress invoices are normally submitted monthly.

Work is accepted and performed under SP's General contract terms. In addition, the conditions according to SPCR 0154 apply for certification services. Furthermore, terms and conditions according to certificates should also be considered.

Other points that customers and holders of certificates need to consider, are the scope of the standards, the requirements of the standards in respect of routine verification, repairs, modifications and compliance with safety requirements other than those related to explosion protection.

It may be necessary to consider possible limitations of SP's accreditations when performing type examination.

## Contact persons

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