

In recent years, plant operators and end-users have been increasingly asking for non-electrical equipment to be IECEx certified instead of, or in addition to, the usual ATEX certification.

What is IECEx?

IECEx is the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres. It uses quality assessment specifications that are based on International Standards prepared by the International Electrotechnical Commission (IEC).

Explosive areas are often known by different names such as “Hazardous Locations”, “Hazardous Areas” “Explosive Atmospheres”, but are essentially where flammable liquids, vapours, gases or combustible dusts are likely to occur in quantities sufficient to cause a fire or explosion.

IECEx and ATEX

The objective of the IECEx System is to facilitate international trade in equipment used worldwide in explosive atmospheres and associated services, whilst maintaining the required level of safety. IECEx is therefore an International Certification Scheme where full compliance with IEC International Standards are required. Compliance with IECEx involves independent verification by a certified body.

ATEX applies to the use of products in the European Union which are used in potentially explosive atmospheres, although it is used outside the EU on a voluntary basis. The equipment manufacturer has sole responsibility for ensuring that any products falling within this category comply with the appropriate EU Directive 2014/34/EC. Manufacturers will issue an ATEX declaration for equipment based on the risk of explosion categorised by a zone (such as 0,1,2) and the customer selects equipment suitable for a zone following their own risk assessment. Compliance with ATEX can be self-certified.

Unlike ATEX, all equipment that is IECEx certified must be independently tested as necessary and certified in order to carry the IECEx certificate, and there is only one certificate with restrictions on use stated in the notes and no differentiation by explosion risk zones.

Industry approach

The first IECEx certificates were issued in 2003 for electrical equipment and the system is now well established for this. For many years, industry has selected electrical equipment based on its IECEx and ATEX certification but for non-electrical equipment ATEX has commonly been the standard used, with many, though not all, non-electrical equipment suppliers accepting the need to comply with ATEX.

IECEx for non-electrical equipment was introduced in 2016 when the ISO 80079-36 and ISO 80079-37 standards were adopted by IECEx for the certification of non-electrical equipment. To date however, very few non-electrical equipment suppliers have been working on gaining IECEx compliance.

The IEC has been active in driving plant operators and end-users to adopt IECEx across all electrical **and** non-electrical equipment. This top-down approach now means that package providers and contractors are being asked to provide IECEx certified non-electrical equipment, which, given that most non-electrical equipment manufacturers have not started the process to become IECEx certified, will prove difficult to source.

Amarinth's approach

At the date of publication of this Technical Bulletin, there are no API 610 / ISO5199 mechanically sealed pump manufacturers that are IECEx compliant. However, Amarith has embraced the need to gain IECEx certification for its products and is undertaking the necessary steps to become an IECEx compliant pump manufacturer. This involves:

- Ensuring the requirements of IECEx are covered by any existing quality system, such as ISO 9001, otherwise changes need to be made to achieve compliance with the IECEx standard.
- Independent notified body must assess the quality system for overall compliance with IECEx.
- IECEx notified body must assess the product technical file to ensure compliance.
- Only then can the company and product(s) be certified to the IECEx standard

In 2018, Amarith reviewed what additional requirements might be needed within its existing ISO 9001 quality system.

In July 2019, Amarith will apply to the independent notified bodies to complete their assessments and following a successful outcome, Amarith will become the world's first fully IECEx compliant manufacturer of API 610 and ISO5199 centrifugal pumps.

Buyers approach to IECEx for centrifugal pumps

Buyers procuring API 610 or ISO5199 pumps will not, at this time, be able to purchase an IECEx certified pump. For longer lead time pumps, if the manufacturer has started the process of gaining IECEx certification (such as Amarith is currently undertaking) then it is possible that the product will be IECEx certified by the time it is dispatched. As such, today's buyers of centrifugal pumps should as a minimum ensure the pump is ATEX certified for the required zone. Most, though not all, manufacturers should be able to provide this. Buyers should then seek clarification from the manufacturer as to its progress in gaining IECEx certification and then assess whether the manufacturer and its products will be IECEx certified by the time the pump is completed.