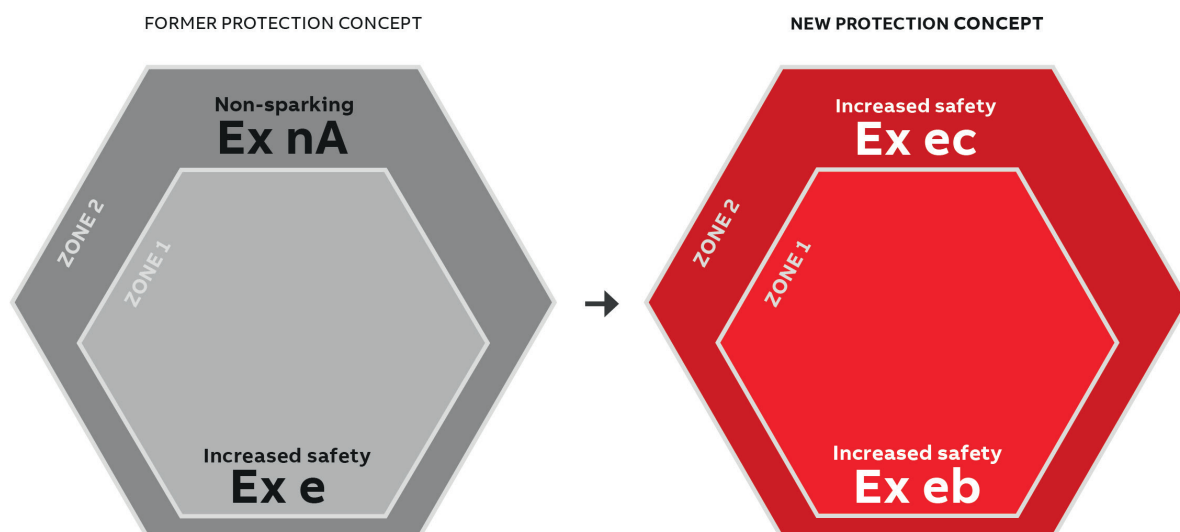


Evolving protection concepts for motors

Non-sparking becomes part of increased safety



01 The new edition of IEC 60079-7 covers non-sparking and increased safety protection concepts. There are now two levels of increased safety protection, Ex eb and Ex ec.

If you use motors for explosive atmospheres, you may have heard about standard changes covering the non-sparking and increased safety protection concepts.

New edition of standard IEC 60079-7

A revised edition (5.0) of IEC 60079-7, which covers the increased safety protection concept, was published in mid-2015 and approved as a European EN standard later the same year. The main change is that the technical requirements for increased safety have expanded to include those for the non-sparking concept.

In practice the technical requirements for LV motors have not changed, but there are now two levels of increased safety protection and this will affect the way motors are marked

The effects of the revision are gradually becoming visible in the marketplace as manufacturers update their type certificates and the new markings start to appear on motors.

In Europe there is an official deadline for compliance, as EU Declarations of Conformity documents (ATEX) must refer to the new revision of the standard by August 2018 at the latest. At ABB we have initiated a project to update the type certificates for our non-sparking and increased safety motors during 2017, and we will start to put the new markings on motors when the certificates are updated. In fact, we have already launched our first products with the new increased safety Ex ec marking: aluminum frame motors in sizes 160 to 280 were introduced in April.

How do the revised standards impact motor users?

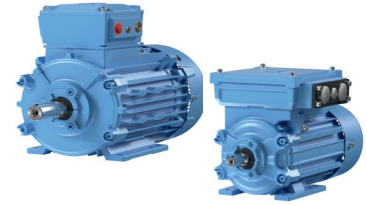
The main thing is to be aware of the changes and take care not to confuse the protection levels. For increased safety applications in Zone 1 you need an Ex eb (or older Ex e) motor. Motors marked with Ex ec (and older non-sparking Ex nA) motors can only be used in Zone 2.

Product portfolio for explosive atmospheres

Full motor offering for any zone, group, subgroup or temperature class

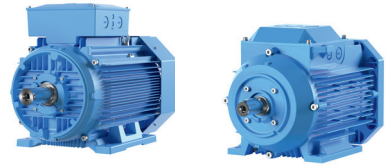
Flameproof motors

- An explosion occurring inside motor will not propagate to environment
- Ex d with both flame proof cast iron frame and terminal box
- Ex de with flame proof cast iron frame and increased safety terminal box
- Gas group IIB, optional IIC
- Temperature class T4, optional T5, T6



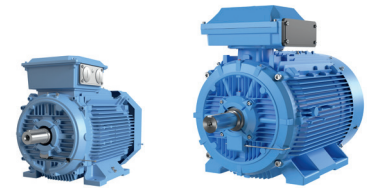
Increased safety motors

- Design prevents sparking or excess temperatures in any part of motor during starting, running or a fault condition
- Cast iron enclosure
- Gas group IIC
- Temperature class T3



Non-sparking motors

- Design prevents sparking or excess temperatures in any part of motor during normal running
- Cast iron or aluminum enclosure
- Gas group IIC
- Temperature class T3



Dust ignition proof motors

- Dust tight enclosure combined with controlled temperature of external parts prevents ignition of combustible dust
- Cast iron or aluminum enclosure
- Dust groups IIIB or IIIC
- Temperature class T125°C, T85°C...T150°C optional

