

3.6 MARKING

Worldwide (IEC)

Marking of electrical equipment is defined in IEC 60079-0. In addition to the name of the manufacturer or its trademark, the type designation, serial number and inspection authority with certificate number, a special code is required that describes the use of the equipment:

- The Ex symbol.
- The symbol for every protection type used. (In the case of associated equipment for installation in dangerous areas, the symbols for the type of protection must be specified in square brackets.)
- Group IIA, IIB or IIC for gas explosion hazardous areas or Group IIIA, IIIB or IIIC for dust explosion hazardous areas.
- Temperature class for gas explosion hazardous areas or maximum surface temperature in °C for dust explosion hazardous areas.
- Explosion protection level (EPL).

Examples:

Ex d e IIC T4 Gb
Ex ta IIIC T120°C Da

The EPL marking can be dispensed with if the protection types clearly show which explosion protection level they achieve. On some protection types this is already denoted by the existing symbols (e.g. ia). On others, the letter a, b or c must be added: d becomes db.

Examples:

Ex db eb IIC T4
Ex ta IIIC T120°C

On associated equipment that may be installed in non-explosive areas, the symbols for the protection type must be specified in square brackets.

Example:

Ex d [ia Ga] IIB T5 Gb or Ex db [ia] IIB T5

The marking of non-electrical equipment is largely identical to that of electrical equipment. However, instead of various symbols for the protection types, the letter "h" is always used.

Europe (ATEX)

In Europe, in addition to marking pursuant to the standard (see IEC), the requirements of EU Directive 94/9/EC and 2014/34/EU (ATEX) must also be satisfied. The following data must be specified:

- Manufacturer's address.
- CE mark (possibly with code of the named authority).
- The symbol and group (e.g.: II) and Category 1, 2 or 3 and letter G (gases) or D (dust).

Example:

Ex II 2 G

In Europe, instead of "Ex", "EEx" used to be used when marking in accordance with the standard, e.g. EEx d e IIC T4. A reference was thus made to the European standards (EN 50014 ff.), which at the time differed from the IEC standards. This is no longer necessary due to the current standard status, so that in Europe new equipment is now only marked "Ex".

Standards for non-electrical equipment were originally issued by CEN in Europe under standard series EN 13463. Marking is similar to that of electrical equipment – with the following exceptions:

- "Ex" is not specified, as the EX mark already refers to explosion protection through ATEX.
- The equipment protection level is not specified.
- The alternative marking is not used either. The protection level is to be determined via the category.

These standards were revised at international level and published in 2016. In Europe they were adopted as standard series EN ISO 80079, so marking is now more similar to that of electrical equipment. Exception: "h" is always specified as the symbol for the protection type.

The marking for electrical and non-electrical equipment is summarised in the appendix on p. 52 onwards.

3. TECHNICAL PRINCIPLES

North America

In addition to usual data (manufacturer, type, serial no., electrical data), explosion protection data should also be included in the equipment marking. Specifications are provided in NEC, CEC and the relevant construction regulations of the inspection authorities.

Electrical equipment approved for Class I, Class II and Class III, Division 1 and Division 2 should be marked so that the following details are included:

- Class(es), Division(s) (optional for Division 1).
- Gas/dust group(s).
- Service temperature or temperature class (optional for T5 and T6).

Example:

Class I Division 1 Groups C D T4

Equipment specified in the USA for zones pursuant to NEC article 505 or 506, or CEC Section 18, should bear the following marking:

- Class (dispensed with in the USA for dust atmospheres and entirely in Canada).
- Zone (dispensed with in Canada).
- Symbol AEx (USA) or Ex (Canada).
- Abbreviation of the protection type(s) used.
- Group of electrical equipment II or gas group(s) IIA, IIB or IIC.
- Temperature class or max. surface temperature of equipment for dust atmospheres.
- Equipment protection level (EPL).

Example:

Class I, Zone 0, AEx ia IIC T6

Division equipment may be used in zones and vice-versa. However the rules set out in NEC and CEC must be observed.