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## Equipment Protection Levels (EPL's)

BS EN 60079-26:2007 "Equipment with Equipment Protection Level (EPL) Ga

This standard adopts a risk assessment approach for the acceptance of hazardous area equipment as an alternative to the current approach of linking equipment to zones.

Traditionally specific types of protection have been linked to the zone of use e.g. Exn in Zone 2 only. This requires the technician on site to understand the relationship between type of protection and zone of use and it also takes no account of the potential consequences of an explosion, should it occur.

Equipment Protection Levels (EPL's) have been introduced to clearly indicate the inherent ignition risk of equipment irrespective of the type of protection being used.

In future (at a date to be confirmed) product will be marked with additional symbols to designate the equipment protection level.

### Gases (Group II)

**EPL Ga** - Equipment for explosive gas atmospheres, having a "very high" level of protection, which is not a source of ignition in normal operation, expected faults or when subject to rare faults.

**EPL Gb** - Equipment for explosive gas atmospheres, having a "high" level of protection, which is not a source of ignition in normal operation or when subject to faults that may be expected, though not necessarily on a regular basis.

**EPL Gc** - Equipment for explosive gas atmospheres, having an "enhanced" level of protection, which is not a source of ignition in normal operation and which may have some additional protection to ensure that it remains inactive as an ignition source in the case of regular expected occurrences (e.g. failure of a lamp)

### Dusts (Group III)

**EPL Da** - Equipment for explosive gas atmospheres, having a "very high" level of protection, which is not a source of ignition in normal operation, expected faults or when subject to rare faults.

**EPL Db** - Equipment for explosive gas atmospheres, having a "high" level of protection, which is not a source of ignition in normal operation or when subject to faults that may be expected, though not necessarily on a regular basis.

**EPL Dc** - Equipment for explosive gas atmospheres, having an "enhanced" level of protection, which is not a source of ignition in normal operation and which may have some additional protection to ensure that it remains inactive as an ignition source in the case of regular expected occurrences



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There are also equivalent protection levels for coal mining (Group I) EPL Ma and EPL Mb.

For the majority of situations the following traditional relationship of EPL's to Zones is \*:

| EPL | Zone |
|-----|------|
| Ga  | 0    |
| Gb  | 1    |
| Gc  | 2    |
| Da  | 20   |
| Db  | 21   |
| Dc  | 22   |

- \*1) "Typical" potential consequences of an explosion apply.
- 2) This does not apply to coal mining.

EPL's are the IEC equivalent of the ATEX categories 1G, 2G, 3G for Group II (Surface industry - Gas) and 1D, 2D and 3D for Group III (Surface industry - Dust).

So: Ga = 1G for Zone 0, Gb = 2G for Zone 1 etc.

The EPL notation follows intrinsically safe levels, a, b and c.

E.g. Exia - Ga - Zone 0  
Exib - Gb - Zone 1  
Exic - Gc - Zone 2

Examples of additional product marking for types of protection used in explosive gas atmospheres : **Ga Ex ia IIC T6** or **Gb Ex d+e IIB T4**

The protection levels for coal mining (Group I) are EPL Ma and EPL Mb.

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