

# ATEX Atmospheres Explosibles

94/19/EC Directive

Harmonises legal provisions of member states for devices and protection systems for designated use in potentially explosive areas.  
New: ATEX 95 (Old: ATEX 100a)

99/92/EC Directive

Minimum requirements for improving the health and safety protection of the worker at risk from explosive atmospheres.  
New: ATEX 137 (Old: ATEX 118a)

### Designation examples:

Use in gaseous atmospheres: II 1 G EEx ia IIC T4

Use in dusty atmospheres: II 2 D T90°C IP64

Use for mining applications: I M2 EEx ia I

Max. surface temperature  
(Data only for devices used in areas rendered potentially explosive by dust also possible through temperature classes)  
-Max. temperature of a surface that dust can penetrate in the event of device failure

Evaluation by the user:

a.) Limit temperature 1=2/3 of min. ignition temperature of dust present

b.) Limit temperature 2=min. glow temperature of dust present minus 75k  
(applies for layer thicknesses of up to 5mm)

The smaller value for the limit temperature must be above the indicated max. surface temperature of the device.

### IP Code

(Data only for devices used in areas rendered potentially explosive by dust)

Figure 1 Contact and foreign body protection:

5=Protection against dust deposits  
6=protection against dust penetration

Figure 2 Water protection

Protection against:

0=(no protection)  
1=vertically falling drip water  
2=drip water on operating device inclined to 15°  
3=spray water  
4=spray water  
5=jet water  
6=strong jet water  
7=temporary immersion  
8=continuous immersion



**Device group**  
I = Mining  
II = all other areas

**Category**  
1 = can be used in Zones 0 or: 20  
2 = can be used in Zones 1 or: 21  
3 = can be used in Zones 2 or: 22  
M1= Mining (comparable with Zones 0 and 1)  
M2= Mining (comparable with Zones 2)

**Atmosphere**  
G = Gas  
D = Dust  
(Mining – no details)

conforms to European Ex-Standards

### Types of ignition protection:

o = Oil immersion  
p = pressurisation  
q = Powder filling  
d = Pressure-proof housing  
e = Increased safety  
ia = Intrinsic safety (required for Zone 0)  
ib = Intrinsic safety (adequate for Zone 1 (+2))  
m = Encapsulation  
s = Special protection

n = Normal operation under normal conditions (for Zone 2 only)  
nA = non-sparking  
nC = protected contacts  
nR = vapour-proof housing  
nL = limited energy  
nP = simplified pressurisation

### Temperature classes:

(Max. temperature of a surface that gas / dust can penetrate in the event of device failure)

T1 = 450°C  
T2 = 300°C  
T3 = 200°C  
T4 = 135°C  
T5 = 100°C  
T6 = 85°C

### Explosion group

(Data only for devices used in areas rendered potentially explosive by gas)

I = Methane (mining)  
IIA  
IIB  
IIC (most dangerous group e.g. hydrogen)