The 94/9/CE instruction impose some prescriptions to equipment users and manufacturers for area with explosion risk. This instruction provide notably:

- **The product agreement by a notified organism (by EC type examination certificate), but also the agreement of an insurance system of manufacturer production quality.**
- **The appending of « CE » marking on different product label. This marking mean that the product answers the instructions relating to it : ATEX instruction, but also if necessary Machine instruction, Low Voltage instruction, etc...**
- **The distinction between the explosible atmosheres due to the presence of gas, vapours or fog (code : G = Gas) and the explosible atmospheres due to presence of air mixture with dust (code : D = Dust).**

The device authentication procedures for this two type of dangerous atmosphere will be differant, and a corresponding marking « G » or « D » is affixed on the authenticated device label.

- **The instruction of conception and fabrication rules aiming to maximize the device safety, in order that they can function in a sure way during their forseeablelifetime :**
  - **Components choice,**
  - **Opening by a particular tool,**
  - **Prevention against the device overload by means of suitable limiters,**
  - **Protection against the electrstatic loads, the stray currents and the leaks,**
  - **The unacceptable heatings, etc...**
- **Taking account of the device operating conditions : humidity, vibrations, pollution, stray voltages...**

Significance of classification in zones (under operator responsibility)

Atmosphere Nature		
Gaz and Vapour zone G (gaz)	**Dust** zone D (dust)	**Presence of a explosible atmosphere**
ZONE 0 Category 1G	**ZONE 20 Category 1D**	**Permanent**
ZONE 1 Category 2G	**ZONE 21 Category 2D**	**Occasionnal**
ZONE 2 Category 3G	**ZONE 22 Category 3D**	**Accidental**

The differents protection modes

Protection mode	Specification	Norms EN790079-0 +	Zone G	Zone D
Exe	Increased safety	EN 60079-7	1 and 2	
Exd	Explosion-proof	EN 60079-1	1 and 2	
Exi	Intrinsic safety	EN 60079-11	0, 1 and 2	
Exm	Encapsulation	EN 60079-18	1 and 2	
Exo	Oil immersion	EN 60079-6	1 and 2	
Exp	Internal overpressure	EN 60079-2	1 and 2	
Exq	Pulverulent filling	EN 60079-5	1 and 2	
IP6X + ground temperature	Protection by cover	EN 61241-1 EN50281-2-1		21 and 22
IP6X + Exi	Dual protection mode			20

TEMPERATURE RANGES (only for gaz)

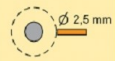
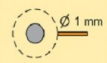
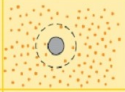
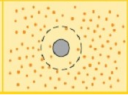
TEMPERATURE RANGE ACCORDING CENELEC AND CEI

Range	T6	T5	T4	T3	T2	T1
Maximum temperature range	85° C	100° C	135° C	200° C	300° C	450° C

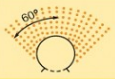
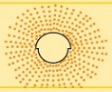
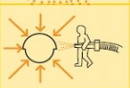
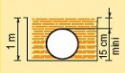
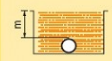
ACCORDING DEGREE PROTECTION CEI 529/ EN60529 / EN 60 034-5

IP X X

Protection against solids

0		No protection
1		Protection against solids ≥ 50 mm (ex. Hands involuntary contact)
2		Protection against solids ≥ 12,5 mm (ex. Finger)
3		Protection against solids ≥ 2,5 mm (ex. Tools, screws, ...)
4		Protection against solids ≥ 1 mm (ex. Fine tools, wire, ...)
5		Protection against dust (No harmful deposits)
6		Totaly protected against dust

Protection against liquids

0		No protection
1		Protection against vertical water falls
2		Protection against water falls until 15°
3		Protection against water falls until 60°
4		Protection against water splashes from all directions
5		Protection against nozzle water steam from all directions
6		Protection against water splashes some as waves
7		Protected against imersion effects
8		Protected against extended imersion effects under specified condition

PRODUCTS MARKING

ATEX MARKING EXEMPLE : CE 0081 Ex II 2 G EEx d IIC T6

CE : The material respond to the European standards and directives which relate to it

0081 : Identification number of the notified organism, when this one intervene in the production control phase : 0080 = INERIS et 0081 = LCIE

Ex : Authorized use in explosible atmosphere. Free circulation in the European union.

II : Devices group : (I = mines, II = ground industries)

2 : Devices category : 1 = permanent risk (zone 0 and 20), 2 = frequent risk (zone 1 and 21), 3 = occasionnal risk (zone 2 and 22)

G : G = Gas and vapour, D = Dust

EEx : The material responds to the standardized protection modes by The CENELEC FOR THE EXPLOSIBLE ATMOSPHERES

d : Protection mode by explosion-proof cover

IIC : The hardest gas group including hydrogen, acetylene and carbon disulphide

T6 : Temperature range corresponding to a maximum ground temperature lower than 85 °C

Suffix X and U meaning

The marking of some products contains sometimes, at the end of the certificate reference, the letter X or U :

X : This symbol means that the product is subjected to special conditions for a sure using. It is then necessary to refer to the certificate itself to know the nature of these special conditions.

U : This symbol means that the certificate relate to an Ex component (part of material). This product cannot be used separately.

LOREME 12, rue des Potiers d'Etain - 57071 Metz ☎ 03.87.76.32.51 - Fax 03.87.76.32.52 - Email: Commercial@Loreme.fr - Technique@Loreme.fr