

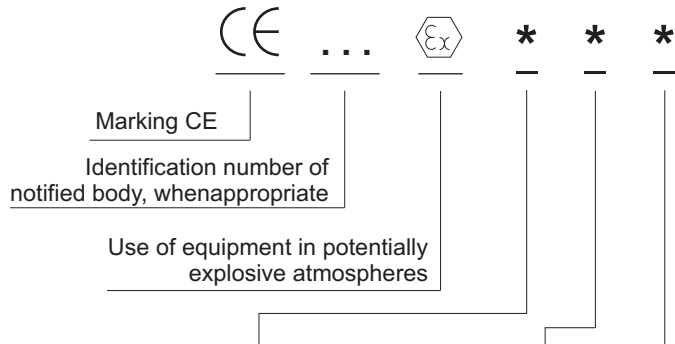
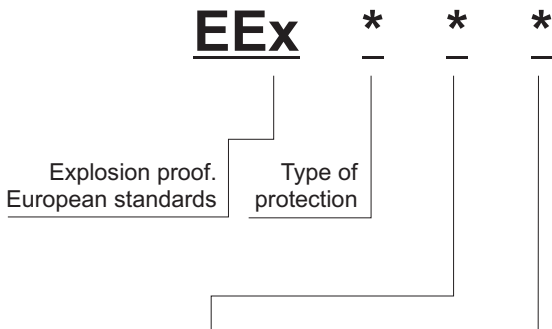
ATEX GUIDE

New European Directive 94/9/CE
Electrical and non-electrical equipment and protection systems

Marking of equipment

CENELEC
(EN 50014)

ATEX
(Directive 94/9/CE)



Group of gas	
I	Mines (Methane)
II	surface industries
IIA	Propane
IIB	Ethylene
IIC	Hydrogen
	Acetylene

Representative ignition gas

Temperature class (group II)	
Class	Maximum surface temperature [°C]
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

Reference ambient Temperature -20°C ÷ 40°C

Equipment Group for surface	Equipment category	Type of explosive atmospheres (group II)	
		G Gas vapours	D Dust
		Zone	Zone
I mines	M1 - Very high level M2 - High level		
II surface	1 - Very high level 2 - High level 3 - Normal	0 1 2	20 21 22

CATEGORY OF EQUIPMENT

Standards and type of protection Electrical equipment for gas (G)

Equipment of mines - Group I

Category M1

Level of protection: Very high level
2 types of protection or 2 independent faults

Category M2

Level of protection: High level
1 type of protection Normal operation

Equipment of surface - Group II

Category 1

Level of protection: Very high level
2 types of protection or 2 independent faults

Category 2

Level of protection: High level
Habitual frequent malfunction

Category 3

Level of protection: Normal
Required level of protection

	Code	CEI	CENELEC EN	Category
General requirements		31-8	50014	
Oil immersion	o	31-5	50015	M2-2
Pressurized apparatus	p	31-2	50016	M2-2
Powder filling	q	31-6	50017	M2-2
Flameproof enclosure	d	31-1	50018	M2-2
Increased safety	e	31-7	50019	M2-2
Intrinsic safety	ia	31-9	50020	M1-1
Intrinsic safety	ib	31-9	50020	M2-2
Encapsulation	m	31-13	50028	M2-2
Protection type "n"	n	31-11	50021	3
Category 1G		31-43	50284	1
Category M1			50303	M1

Electrical equipment for dust (D)

Apparatus and test	50281-1-1	1-2-3
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INFLAMMABLE GASES AND VAPORS CLASSIFICATION

GROUP OF CONTAINER	I	IIA		IIB	IIC
GAS OR VAPOR	Methane (firedamp)	Ammonia Industrial methane Blas-furnace gas Carbon monoxide Propane Butane Pentane Esane Eptane Iso-octane Decane Benzene Xilene Cyclohexane Acetone Ethyl-methyl-ketone	Methyl acetate Ethyl acetate Normal propyl acetate Normal butyl acetate Amyl acetate Cloroethylene Methanol Ethanol Iso Butanol Normal Butanol Amyl alcohol Ethyl nitrite	Buta 1:3 diene Ethylene Diethyl ether Ethylene oxide Town gas Coke-oven gas	Hydrogen Acetylene

INDEX OF PROTECTION

1 st figure: protection against solid bodies			2 st figure: protection against Liquids		
IP	tests		IP	tests	
0		No protection	0		No protection
1		Protected against solid bodies larger than 50 mm (eg. : accidental contact with the hand)	1		Protected against vertically-falling drops of water (condensation)
2		Protected against solid bodies larger than 12,5 mm (eg. : accidental contact with the hand)	2		Protected against drops of water falling at up to 15° from the vertical
3		Protected against solid bodies larger than 2,5 mm (tools, wires)	3		Protected against drops of rainwater at up to 60° from the vertical
4		Protected against solid bodies larger than 1 mm (fine tools, smals wires)	4		Protected against projections of water from all directions
5		Protected against dust (no harmful deposit)	5		Protected against jets of water from all directions
6		Completely protected against dust	6		Completely protected against jets of water of similar force to heavy seas
			7		Protected against the effects of immersion
			8		Protected against effects of prolonged immersion under specified conditions