

Electrical equipment

CE	1	EX	2	3	4	5	6	7	8	9
	0158		II	2	D	EX	ta	IIIC	T80 °C	Db

Marking in acc. with ATEX Directive 2014/34/EU

Marking in acc. with EN standards

Non-electrical equipment

CE	1	EX	2	3	4	5	6	7	8	9	10
			II	2	G	EX	h	IIC	T6	Gb	X

1. Official inspection authorities (selection) Only required if equipment was certified by a notified body

Notified bodies	Country	ID number
TÜV Rheinland	Germany	0035
TÜV Nord Cert	Germany	0044
INERIS	France	0080
LCIE	France	0081
PTB	Germany	0102
TÜV Süd	Germany	0123
DEKRA EXAM	Germany	0158
DEKRA B.V.	The Netherlands	0344
SP	Sweden	0402
SIRA	UK	0518
VTT	Finland	0537
BAM	Germany	0589
CESI	Italy	0722
SGS BASEEFA	UK	1180
SGS-TÜV Saar	Germany	1637

3. Equipment categories

Equipment category M1:
Mining – very high level of safety

Equipment category M2:
Mining – high level of safety

Equipment category 1:
Very high level of safety

Equipment category 2:
High level of safety

Equipment category 3:
Normal level of safety

4. Types of explosive atmosphere

G (gas): Mixture or gases, vapours or mists and air

D (dust): Dust-air mixture

7. Groups

Gas groups	Typical gases
II A	Propane
II B	Ethylene
II C	Hydrogen
Dust groups	Definition
III A	Flammable substances
III B	Non-conductive dust
III C	Conductive dust

5.

EX symbol

6. Types of ignition protection

Ignition protection types, electric	Symbol	Standard
Flameproof enclosure	d	EN 60079-1
Pressurised enclosure	p	EN 60079-2
Powder filling	q	EN 60079-5
Liquid immersion	o	EN 60079-6
Increased safety	e	EN 60079-7
Intrinsic safety	i	EN 60079-11
Ignition protection types, non-electric	Symbol	Standard
Electrical equipment ignition protection type "n"	n ₋	EN 60079-15
Encapsulation	m	EN 60079-18
Devices with optical radiation	op	EN 60079-28
Protection by enclosure	t	EN 60079-31
Ignition protection types, non-electric	Symbol	Standard
Flow restricting enclosure	fr	EN 13463-2
Flameproof enclosure	d	EN 13463-3
Constructional safety "c"	h	EN 80079-37
Control of ignition source "b"	h	EN 80079-37
Liquid immersion "k"	h	EN 80079-37

8. Temperature classes

Temperature class, gas	Max. surface temperature in °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

In **dust ex. area** the max. surface temperature is stated directly

9. Equipment protection level (EPL)

EPL	Category/type of atmosphere
Ma	M1
Mb	M2
Ga	1 G
Gb	2 G
Gc	3 G
Da	1 D
Db	2 D
Dc	3 D

2. Equipment groups

Equipment group I:

Equipment intended for use in underground parts of mines, and in those parts of surface installations of such mines, liable to be endangered by firedamp and/or combustible dust

Equipment group II:

Equipment intended for use in other areas that could be at risk of an explosive atmosphere

10. Restrictions for equipment

X: indicates special conditions

U: Ex component with sub-certification, not to be used on its own