



		Equipment group	Equipment category	Festo ATEX description		EPL	Area of application
		I	M1 M2			Ma Mb	Mining
Zone Gas	Zone Dust	II					All non-mining areas of application
0		II	1G	EX 5	EX 6	Ga	Gas, mist, vapour
	20		1D	EX 9		Da	Dust
1		II	2G	EX 3	EX 4	Gb	Gas, mist, vapour
	21		2D	EX 8		Db	Dust
2		II	3G	EX 1	EX 2	Gc	Gas, mist, vapour
	22		3D	EX 7		Dc	Dust

EPL = equipment protection level



**Zone**

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Assessment of the plant according to Directive 99/92/EC (ATEX 137)

**Result:**

- Zone classification
- Temperature classes
- Explosion groups
- Ambient temperature

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Health and safety requirements for workers

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Explosion protection document of the plant manufacturer

**Category**

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Assessment of the equipment according to Directive 2014/34/EU

**Result:**

- Equipment category
- Temperature classes
- Explosion groups
- Ambient temperature

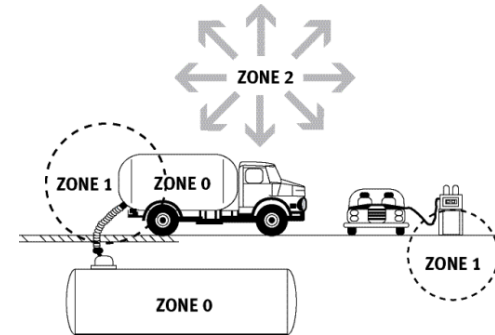
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Safety requirements for equipment and protective systems

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Equipment supplier/Festo

**Example of the gas ATEX zone**



Max. perm. surface temperature (of the equipment)	Temperature class
450 °C	T1
300 °C	T2
200 °C	T3
135 °C	T4
100 °C	T5
85 °C	T6



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Gas/temperature classes (max. perm. surface temperature of equipment)

		T1	T2	T3	T4	T5	T6
		450 °C	300 °C	200 °C	135 °C	100 °C	85 °C
Explosion groups for gases Ignitability ↓	increasing ↑	I Methane					
		IIA Acetone Ethane Ethyl acetate Ammonia Benzene Benzenamine Formic acid Methane Methyl chloride	Methanol Propane Ethyl alcohol n-Butane n-Butyl alcohol	Petrols Turpentine Diesel fuel Aircraft fuel Heating oil n-hexane	Acetaldehyde		Ethyl nitrite
		IIB Hydrogen cyanide	Ethylene	Dimethoxymethane	Ethyl ether		
		IIC Hydrogen	Acetylene				Carbon disulphide

		Dust	
Dust groups Ignitability ↓	increasing ↑	IIIA	Combustible fibres and lint (Example: textiles)
		IIIB	Non-conductive dust (Example: wood dust, flour dust)
		IIIC	Conductive dust (Example: metal dust, carbonaceous dust)

Electrical ignition protection types			
Ignition protection type	standards	Description	Used in category
eb, ec	EN/IEC 60079-7	Increased safety	2G, 3G
ta, tb, tc	EN/IEC 60079-31	Protected by housing	1D, 2D, 3D
ia, ib, ic	EN/IEC 60079-11	Intrinsic safety	1GD, 2GD, 3GD
nC	EN/IEC 60079-15	Non-sparking equipment	3G
da, db, dc	EN/IEC 60079-1	Flameproof enclosure	1G, 2G, 3G
ma, mb, mc	EN/IEC 60079-18	Moulded encapsulation	1GD, 2GD, 3GD
pxb, pyb, pzc	EN/IEC 60079-2	Pressure-proof encapsulation	2GD, 3GD
h	EN/ISO 80079-37	constructional safety	2GD, 3GD

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1 designation  
2 123456 V608  
3

10 11 12 13 14  
II 2 G Ex eb IIC T4 Gb  
15  
II 2 D Ex tb IIIC T120°C Db  
4 5 6 7 8 9  
16 -10°C ≤ T<sub>a</sub> ≤ 60°C  
17 PTB 06 ATEX 7334 X

- Directive 2014/34/EU
- Name/address of the manufacturer
  - Type designation/material no.
  - Series no./year of manufacture
  - CE marking
  - No. of the certification office
  - Explosion protection symbol
  - Equipment group II (above ground)
  - Equipment category
  - G= gas / D= dust

- EN IEC 60079-0:2018
- Explosion protection to European standard
  - Ignition protection type
  - Permissible explosion group/dust group
  - Max. permissible surface temperature
  - EPL = equipment protection level
  - Permissible ambient temperature range
  - No. of EC-type examination certificate
  - X = special operating conditions

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