

ADALIT

ATEX GUIDELINES

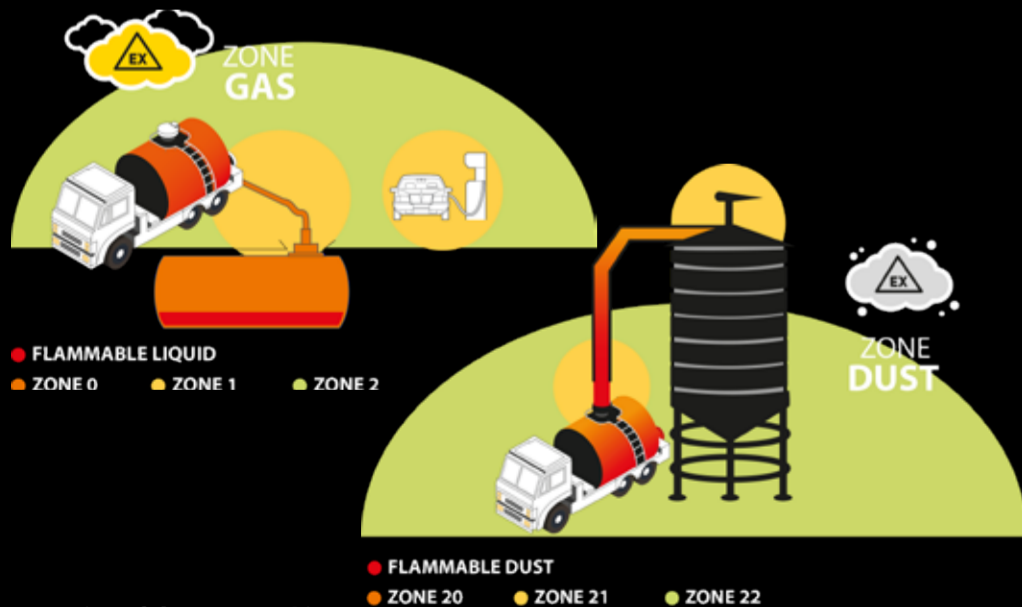


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Directive 2014/34/EU of the European Parliament and of the Council, of 26 February 2014, regulates the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres.

What is a potentially explosive atmosphere?
It means a mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after potential ignition has occurred, combustion spreads to the entire unburned mixture.

What are the zones and how are they classified?
Every company must classify in ATEX zones the areas where explosive atmospheres may form and where special precautions need to be taken to protect the safety and health of workers. Aspects to be considered: the type of substance causing the explosive atmosphere, the frequency with which it occurs and its duration.



Meaning of the ATEX marking
Products that have obtained an ATEX Certificate must bear an identification label indicating the type of marking. It provides information on the particular conditions under which the product can be used.

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Classification and labelling of explosion proof areas

Flammable medium	Hazardous locations Probability of a potential explosive atmosphere occurring	Classification of explosion proof areas	Product Classification		
			Product Group	Product Category	Product Level
Mining	Underground	-	I	M1	Ma
	Surface	-	I	M2	Mb
Gases, mists, vapours	Always, temporarily or often present	Zone 0	II		
	Occasionally present	Zone 1	II	1G	Ga
	Very seldom or only present for a short period	Zone 2	II	2G	Gb
Dust	Always, temporarily or often present	Zone 20	II		
	Occasionally present	Zone 21	II	1D	Da
	Does not occur or only seldom for a short period	Zone 22	II	2D	Db

Gas Classification by Explosion groups & Temperature classes

Explosion Group		Examples depending on: » explosion group » temperature class				
IIA	IIB	IIC	Ammonia, Methane Ethane, Propane	Ethanol Butane	Petrol, Diesel fuel Fuel oil, n-Hexane	Acetal-dehyde
			Citygas Carbon monoxide	Ethylene Ethylene oxide	Ethyl glycol Carbon hydrogen	Ethyl ether
			Hydrogen	Acetylene		Carbon disulphide
T1 < 450 °C						
T2 < 300 °C						
T3 < 200 °C						
T4 < 135 °C						
T5 < 100 °C						
T6 < 85 °C						
Product use depending on temperature class (T1 - T6). The temperature class indicates the max. temperature of the exposed surface of the product. For dust explosion proof, the max. surface temperature is directly shown.						

Notified body	
Code	Name
0163	LOM (Spain)
2804	ExVeritas (Denmark)



II 1G Ex ia IIC T4 Ga IP67
II 1D Ex ia IIIC T85°C Da



LOM 12ATEX2087X

Type of protection according to EN 60079-0

Protection Concept	Protection principle	Code	Symbol	Zone	Standard
Flameproof	Prevents transmission of the explosion outside	Ex d (da, db, dc)		0, 1, 2	EN 60079-1
Increased safety	Prevents high temperatures and sparks	Ex e (eb, ec)		1, 2	EN 60079-7
Intrinsic safety	Low voltage supply	Ex i (ia, ib, ic) Ex iD (iaD, ibD, icD)		0, 1, 2 20, 21, 22	EN 60079-11
Pressurized	Positive pressure device	Ex p Ex pD		1, 2 21, 22	EN 60079-2
Moulding	Encapsulated	Ex m Ex mD		0, 1, 2 20, 21, 22	EN 60079-18
Oil immersion	Components immersed in oil to isolate	Ex o		1, 2	EN 60079-6
Powder filling	Prevents transmission of the explosion outside	Ex q		1, 2	EN 60079-5
Protection "n"	As above, but for use in zone 2	Ex n		2	EN 60079-15
Optical radiation protection	Prevents transmission of the explosion outside	Ex op is Ex op pr Ex op sh		0, 1, 2 20, 21, 22	EN 60079-28
Dust explosion proof	Design prevents for the ingress of dusts	Ex tD (ta, tb, tc)		20, 21, 22	EN 60079-31

Dust Classification

Group	Type of Dust
IIIA	Flammable fibres
IIIB	Non conductive dusts
IIIC	Conductive dusts

EC/EU Type examination certificate number

Notified body	Year	Certificated	Serial number	Suffix
LOM	12	ATEX	2087	X

Ingress Protection EN 60529

IP	Protection against solid objects	Protection against liquids
0	No protection	No protection
1	Protected against objects greater than 50mm diameter	Protected against falling drops of water
2	Protected against objects greater than 12.5mm diameter	Protected against drops of water falling at 15°
3	Protected against objects greater than 2.5mm	Protected against low pressure spray (light rain)
4	Protected against objects greater than 1.0mm such as wire	Protected against splashing water
5	Ingress of dust is not totally prevented but dust does not enter in harmful quantities	Protected against medium pressure water jet
6	No ingress of dust permitted	Protected against high pressure water jet
7	—	Protected against temporary immersion in water - 1 metre for 30 minutes
8	—	Protected against the effects of continuous immersion in water. Manufacturer has to set the particular conditions - more than 1 metre for a defined period of time
X	Not measured	Not measured