

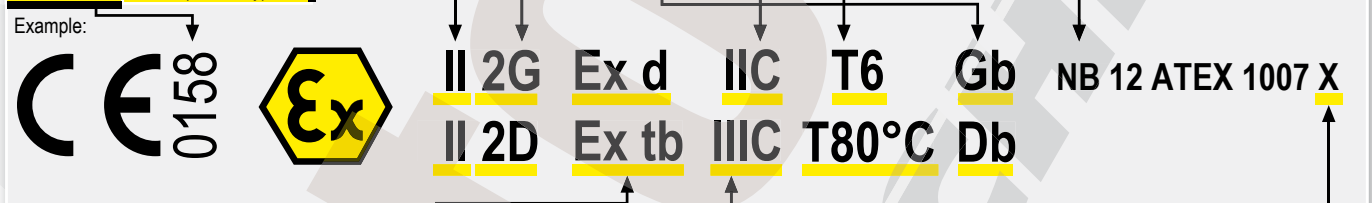
Labelling of explosion proof equipment according to ATEX directives*

Classification and labelling of hazardous locations

Classification Explosion groups & Temperature classes

Flammable medium	Hazardous locations Probability of a potentially explosive atmosphere occurring	Classification of hazardous locations	Product classification		Equipment protection level (EPL)	Explosion group	Examples depending on - explosion group - temperature class						
			Product group	Product category			Ammonia Methane Ethane Propane	Ethanol Cyclohexene n-Butane	Petrol Diesel fuel Fuel oil n-Hexane	Acetaldehyde			
Gases, mists, vapours	Continuously, for long periods or frequently	Zone 0	II			IIA IIB IIC							
	Likely to occur	Zone 1	II	1G	Ga		City gas Acrylic nitrile	Ethylene Ethylene oxide	Ethyl glycol Carbon hydrogen	Ethyl ether			
	Infrequently and for short periods only	Zone 2	II	2G 3G	Gb Gc		Hydrogen	Acetylene				Carbon disulphide	
Dusts	Continuously, for long periods or frequently	Zone 20	II			T1 < 450 °C T2 < 300 °C T3 < 200 °C T4 < 135 °C T5 < 100 °C T6 < 85 °C	Attention: this list is only an extract of possible flammable mediums and does not claim to be complete!						
	Likely to occur	Zone 21	II	1D 2D	Da Db								
	Infrequently and for short periods only	Zone 22	II	3D	Dc								

Official institutes	
code number	Institute Notified Body (NB)
0102	PTB (Germany)
0158	EXAM (Germany)



Prevents transmission of the explosion outside	flameproof enclosure	Ex d		1, 2	EN 60079-1
Prevents high temperatures and sparks	increased safety	Ex e		1, 2	EN 60079-7
Low current/voltage supply	intrinsic safety	Ex i ¹ Ex iD ²		0, 1, 2 20, 21, 22	EN 60079-11
Positive pressure device	pressurised apparatus	Ex p Ex pD		1, 2 21, 22	EN 60079-2
Encapsulated	moulding	Ex m ³ Ex mD ⁴		0, 1, 2 20, 21, 22	EN 60079-18
Parts immersed in oil to isolate from explosive atmosphere	oil immersion	Ex o		1, 2	EN 60079-6
Prevents transmission of explosion outside	powder filling	Ex q		1, 2	EN 60079-5
As above, but for use in zone 2	protection "n"	Ex n		2	EN 60079-15
Dust explosion proof	protection "tD"	Ex t ⁵		20, 21, 22	EN 60079-31
Protection principle	Type of protection	Code	Symbol	To use in zone	CENELEC

Code	Dust classification
IIIA	flammable fibres
IIB	non conductive dust
IIC	conductive dust

Code	Ingress Protection	Protection against solids/dust	Protection against water
8	–	–	long periods of immersion
7	–	–	the effects of temporary immersion
6	totally protected against dust	–	strong jets of water
5	dust - limited ingress	–	low pressure jets from all directions
4	solids objects > 1 mm	–	sprays from all directions
3	solids objects > 2,5 mm	–	direct sprays up to 60° from vertical
2	solids objects > 12,5 mm	–	direct sprays up to 15° from vertical
1	solids objects > 50 mm	–	vertical falling drops of water
0	no protection	–	no protection

Application	Code
For common use	–
For use under special conditions	X
This product is an Ex-certified component for use in a complete system	U

Protection principle – Type of protection – EN 60079-0 General Requirements Ingress Protection EN 60529 Further information

¹ ia (zone 0, 1, 2), ib (zone 1, 2), ic (zone 2) ³ ma (zone 0, 1, 2), mb (zone 1, 2), mc (zone 2) ⁵ ta (zone 20, 21, 22), tb (zone 21, 22), tc (zone 22)
² iaD (zone 20, 21, 22), ibD (zone 21, 22), icD (zone 22) ⁴ maD (zone 20, 21, 22), mbD (zone 21, 22), mcD (zone 22) ⁶ Highest possible application areas

* from April 20, 2016 replacement of ATEX 94/9/EC directives with directives according to ATEX 2014/34/EU

