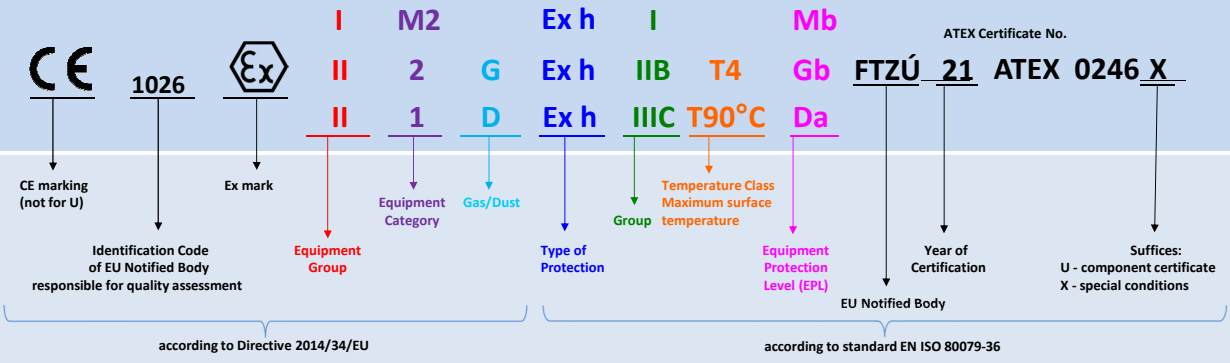
ATEX Coding Non-Electrical Equipment



A potentially explosive atmosphere exists when a mixture of air gases, vapours, mists, or dusts combine in a way that can ignite under certain operating conditions. Equipments and protective systems intended for use in potentially explosive atmospheres ATEX cover a range of products, including those used on fixed offshore platforms, petrochemical plants, mines, and flour mills, amongst others.

The ATEX **Directive 2014/34/EU** covers equipment and protective systems intended for use in potentially explosive atmospheres. The Directive defines the essential health and safety requirements and conformity assessment procedures, to be applied before products are placed on the EU market. It is aligned with the New Legislative Framework policy, and it is applicable from 20th April 2016, replacing the previous Directive 94/9/EC.

Groups according to EN ISO 80079-36	
Group I	Mines susceptible to firedamp and coal dust
	Methane
Group II	Explosion gas atmosphere
Subdivisions	Typical gas
IIA	Propane
IIB	Ethylene
IIC	Hydrogene
Group III	Explosion dust atmosphere
Subdivisions	Typical dust
IIIA	Combustible flyings
IIIB	Non-conductive dust
IIIC	Conductive dust

Zones according to EN 60079-10-1 or 2			
Explosive atmosphere	Classification based upon the frequency of the occurrence and duration of an explosive atmosphere		
	Continously, longterm or frequently	Occasionally	Not likely to occur and for short period only
Gas	Zone 0	Zone 1	Zone 2
Dust	Zone 20	Zone 21	Zone 22

Temperature class according to EN ISO 80079-36	Maximum surface temperature
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

Area	Equipment				
EN 60079-10-1 EN 60079-10-2	Directive 2014/34/EU			Standard EN ISO 80079-36	
Zone	**Group**	**Category**	**Letter**	**EPL**	**Group**
-	I	M1	-	Ma	I
-	I	M2	-	Mb	I
0	II	1	G	Ga	II
1	II	2	G	Gb	II
2	II	3	G	Gc	II
20	II	1	D	Da	III
21	II	2	D	Db	III
22	II	3	D	Dc	III

Type of protection for non-electrical equipment in explosive atmospheres

Type of protection	Symbol	Zone	Diagram	Standard
General requirments	-	0 20 1 21 2 22		EN ISO 80079-36
Constructional safety "c" Control of ignition source "b" Liquid immersion "k"	h	0 20 1 21 2 22		EN ISO 80079-37
Flameproof enclosure	db dc	1 2		EN 60079-1
Pressurized enclosure	px, pxb py, pyb pz, pzc	1 21 1 21 2 22		EN 60079-2
Protection by enclosure	ta tb tc	20 21 22		EN 60079-31

Example for reporting of the identification of ignition hazards

	1		2					3			4					
	ignition hazard		assessment of the frequency of occurrence without application of an additional measure					measures applied to prevent the ignition source becoming effective			frequency of occurrence incl. measures applied					
	a	b	a	b	c	d	e	a	b	c	a	b	c	d	e	f
No.	potencial ignition source	description / basic cause *(Which conditions originate which ignition hazard?)*	during normal operation	during foreseeable malfunction	during rare malfunction	not relevant	reasons for assessment	description of the measure applied	reference basis *(citation of standards or rules)*	technical documentation *(evidence including relevant features listed in column 1)*	during normal operation	during foreseeable malfunction	during rare malfunction	not relevant	resulting EPL	necessary restrictions
1	electrostatic discharge	parts of non metallic material with an undefined surface resistance		X			no charging during normal operation, material is an outer part of the casing, charging could be done by a person	largest area less than 2 500 mm²	clauses 7.4.2, 7.4.3, 6.7.5 a)	specifications of the material in cluases 7.4.2, 7.4.3; parts list, pos: ...; drawing no: ...				X	Ga	IIB
2	hot surface	hot surface of a frictional wheel drive		X			bearing has negligible heating during normal operation	the bearing (ISO 281) for a specified lifetime, a malfunction is generally agreed as a rare incident under these conditions. The max. surf. temp. is determined under the most adverse conditions (110°C)	ISO 80079-37 "c"	test report no. ... about the thermal type test			X		Gb	T4
3	mechanical spark	mechanical generate sparks due to a grinding		X			mechanical grinding cannot be excluded, assessment is provided by a harmonised European standard	the minimum clearance between rotating elements and the casing is defined	clause 4.15	constructional measures design according to drawing no. ...			X		Gb	
4	electrical equipment	electric motor inside the assembly		X			electrical equipment is a possible ignition source	only electrical equipment with certification of conformity is used	IEC 60079 series	certificate and instructions			X		Gb	IIB T3
										Resulting EPL including all existing ignition hazards:					Gb	IIB T3

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We are

Authorized body AO 210
EU Notified Body No. 1026
Accredited Certification Body according to EN ISO/IEC 17065
Accredited testing laboratory according to EN ISO/IEC 17025
Accredited "A" Inspection Body according to EN ISO/IEC 17020
Approved IECEx Scheme ExCB and ExTL

We offer

In area of potentially explosive atmospheres:

Testing, certification, inspection of equipments and protective systems.
Training, technical advice, quality system approval, technical file storage, assistance with ATEX Directive implementation.