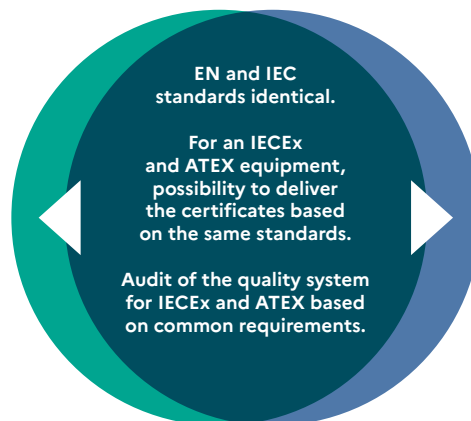




EUROPEAN SCHEME OF CERTIFICATION (DIRECTIVE 2014/34/EU)

	ELECTRIC / DIESEL	MECHANICAL / PNEUMATIC / HYDRAULIC
CAT 1 OR M1	- EU type examination (A.III) - Production quality assurance (A.IV or A.V)	- EU type examination (A.III) - Production quality assurance (A.IV or A.V)
CAT 2 OR M2	- EU type examination (A.III) - Production quality assurance (A.VII or A.VI)	- Internal control (A.VIII) - Communication/deposit of the technical documentation to a notified body
CAT 3	Internal control of production (A.VIII)	Internal control of production (A.VIII)
OR		
CAT 1, 2 OR 3	Unit verification (A.IX)	

For protection systems : idem Cat 1 or M1



INTERNATIONAL SCHEME OF CERTIFICATION IECEx



ZONES, CATEGORY, PROTECTION LEVEL OF THE EQUIPMENT

	60079-0	DIRECTIVE 2014/34/EU	DIRECTIVE 1999/92/EC
Environment	EPL(*)	Group	Zones (**)
Mines	Ma	I	N/A
	Mb	(Mining industry)	
Gas	Ga	II	0
	Gb		1
	Gc		2
Dusts	Da	III	20
	Db		21
	Dc		22

(*) Equipment Protection Level

(**) Zone 0 / 20 : Present continuously or for long periods or frequently

Zone 1 / 21 : likely to occur in normal operation occasionally

Zone 2 / 22 : Not likely to occur in normal operation but, if it does occur, will persist for a short period only

EXAMPLE OF MARKING PLATE

Manufacturer Name or Trademark	Manufacturer Name	Type : ABC	Type of equipment
Address	60 550 Verneuil-en-Halatte — France	Serial number : 12345	Equipment serial number
Year of manufacture	Year of construction : 2025		
Regulatory ATEX logo	Ex II 2 GD		
Marking according to directive	Ex eb ib IIC T6 Gb		
Normative marking	Ex tb IIIC T85°C Db		
ATEX certificate number	INERIS 24 ATEX 0030	IECEx INE 24.0046	IECEx certificate number
Security warning	WARNING: DO NOT OPEN UNDER ENERGIZED POWER		
CE regulatory logo	0080		
	INERIS 99ATEX9999 X → with special conditions		
	INERIS 99ATEX9999 U → component		

Number of the notified body issuing the quality assurance notification

MAIN TYPES OF PROTECTION

IEC / EN / ISO STANDARD	CODE	CONCEPT	ZONE
			GAS
60079-0	-	General requirements	-
60079-1	da/db/dc	Flameproof enclosure	0/1/2
60079-2	pxb/pyb/pzc	Pressurized apparatus	1/2
60079-5	qb/qc	Powder filling	1/2
60079-6	ob/oc	Oil immersion	1/2
60079-7	eb/ec	Increased safety	1/2
60079-11	ia/ib/ic	Intrinsic safety	0/1/2
60079-15	nA (*) nL (**) nR nC	Non sparking Energy-limited Restricted-breathing Sealed devices	2 2 2 2
60079-18	ma/mb/mc	Encapsulation	0/1/2
60079-28	op is/op sh/op pr	Optical radiation	0/1/2
60079-31	ta/tb/tc	Protection by enclosure	-
60079-33	sa/sb/sc	Special	0/1/2
80079-36	h	Non-electrical equipment: General requirements	0/1/2
80079-37	h	Constructional safety (c)	0/1/2
80079-37	h	Control of ignition sources (b)	0/1/2
80079-37	h	Liquid immersion (k)	0/1/2

(*) The «nA» protection mode is replaced by the «ec» protection mode.

(**) The «nL» protection mode is replaced by the «ic» protection mode.

GAS GROUPS

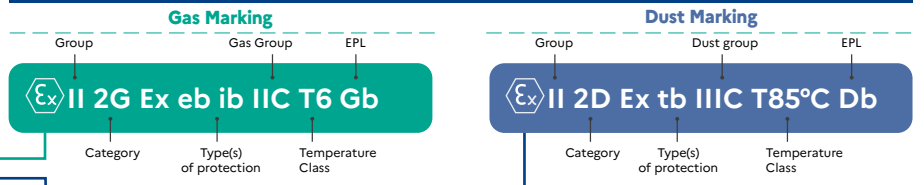
GROUP	REFERENCE GAZ	MESG (mm)	MIE (mJ)
I	Methane	1.14	0.28
IIA	Propane	0.92	0.25
IIB	Ethylene	0.65	0.07
IIC	Hydrogen / Acetylene	0.37	0.017

MESG : Maximal Experimental Safety Gap MIE : Minimal Ignition Energy

DUST GROUPS

GROUP	DUST TYPE	SIZE	RESISTIVITY
IIIA	Combustible flyings	> 500 µm	-
IIIB	Non-conductive dusts	≤ 500 µm	> 10 ⁹ Ω.m
IIIC	Conductive dusts	≤ 500 µm	≤ 10 ⁹ Ω.m

MARKING



Gas temperature classes

MST	AIT
T1 450°C	Methane 600°C(T1)
T2 300°C	Hydrogen 560°C(T1)
T3 200°C	Ethylene 440°C(T2)
T4 135°C	Acetylene 305°C(T2)
T5 100°C	Kerosene 210°C(T3)
T6 85°C	Ethyl ether 175°C(T4)
	Carbon disulphide 90°C(T6)

MST : Maximum Surface Temperature
AIT : Auto-Ignition Temperature

Dust ignition temperatures

MATERIAL (granulometry)	Cloud ignition T*	5mm layer T*
Aluminum (10 µm)	560	430
Wheat (37 µm)	510	300
Wood (60 µm)	500	310
Sugar (30 µm)	490	480
Paint pigments (52 µm)	470	450
Corn (28 µm)	440	280
Polyethylene (72 µm)	440	(Fusion)

Equipment Maximum Surface Temperature < Layer ignition T* - 75K
Equipment Maximum Surface Temperature < 2/3 x Cloud ignition T*

DESIGN / INSTALLATION / INSPECTION / MAINTENANCE / REPAIR

IEC / EN / ISO STANDARD	PRINCIPE
60079-10-1	Classification of areas - Gas
60079-10-2	Classification of areas - Dust
60079-14	Electrical equipment installation
60079-17	Inspection and Maintenance
60079-19	Repair, Overhaul, and Reconditioning
60079-32-1	Electrostatic Hazards - Guidance
60079-32-2	Electrostatic Hazards - Tests
60079-46	Assembly
80079-20-1	Gas and Vapor Characteristics
80079-20-2	Combustible Dust Characteristics
80079-34	Quality management systems for the manufacture of Ex products
FRENCH STANDARD	
NF C 15-100	Low-voltage electrical installations (external influence BE3 for Explosion Risks)

INERIS certification schemes

