

HAZARDOUS AREAS - ATEX AND IECEx

Guide to classification

CLASSIFICATIONS OF HAZARDOUS AREAS

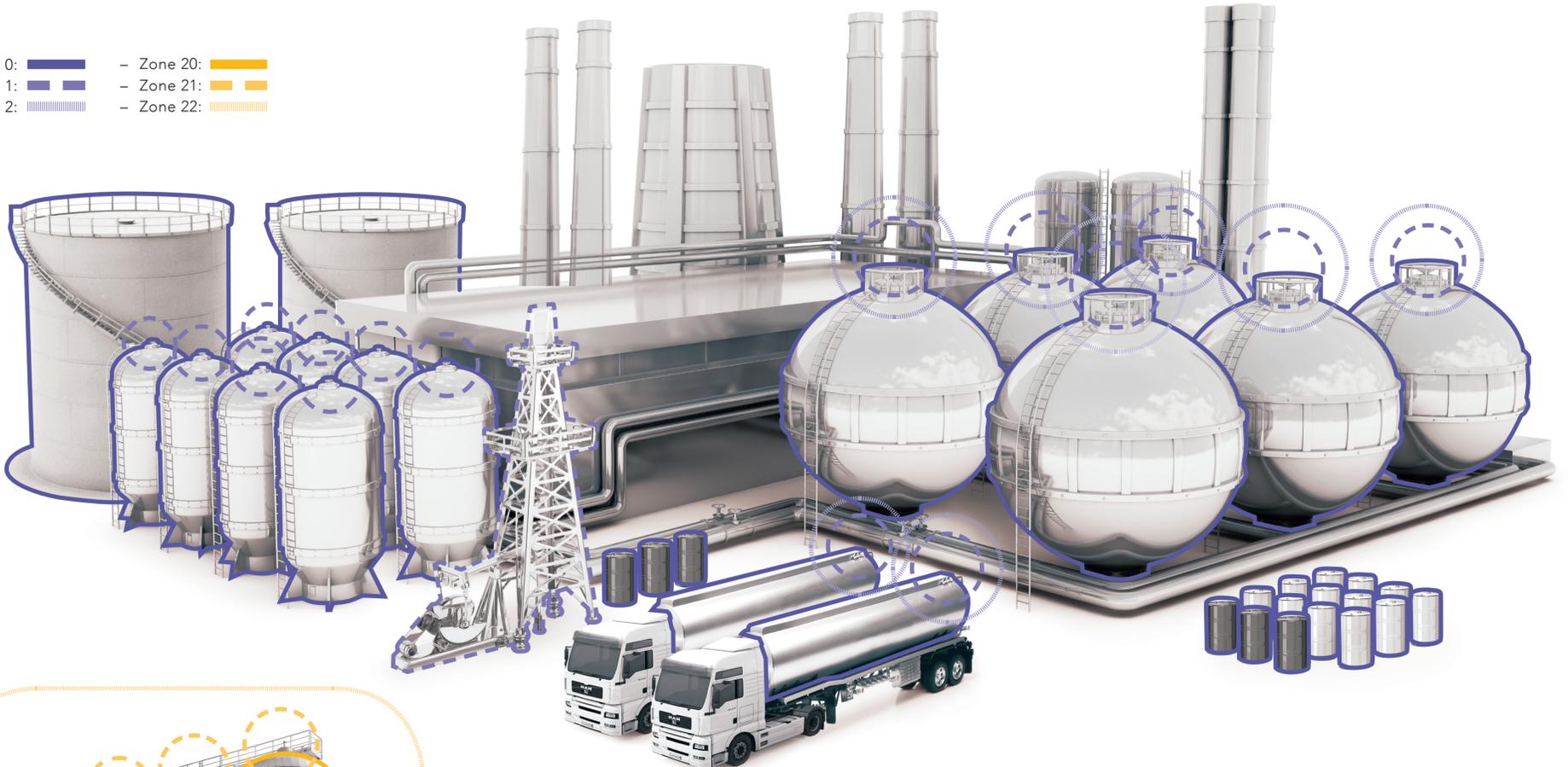
Classifications of Hazardous Areas		Description	ATEX		EPL	Equipment Usage
			Group	Category		
Mining	Energised	Persistent risk of methane gas and other dusts	I	M1	Ma	
	De-energised		I	M2	Mb	
Gas Environments	Zone 0	Persistent and continuous presence of gas for frequent or long periods	II	1G	Ga	ATEX Equipment Category 1G , Equipment Protection Level Ga
	Zone 1	Likely occurrence of gas presence in normal operation	II	2G	Gb	ATEX Equipment Category 2G or higher , Equipment Protection Level Gb or higher
	Zone 2	Unlikely occurrence of gas presence in normal operation, short term persistence if any	II	3G	Gc	ATEX Equipment Category 3G , Equipment Protection Level Gc or higher
Dust Environments	Zone 20	Persistent and continuous presence of dust for frequent or long periods	II	1D	Da	ATEX Equipment Category 1D , Equipment Protection Level Da
	Zone 21	Likely occurrence of dust presence in normal operation	II	2D	Db	ATEX Equipment Category 2D or higher , Equipment Protection Level Db or higher
	Zone 22	Unlikely occurrence of dust presence in normal operation, short term persistence if any	II	3D	Dc	ATEX Equipment Category 3D or higher , Equipment Protection Level Dc or higher

GAS & DUST GROUPS

Group			Typical	Examples
Mining	I		Methane (Mining only)	
Gases	IIA		Propane	Ammonia, Methane, Gasoline, Butane
			Ethylene	Town gas, Acrylonitril
	IIB+H2		Hydrogen	
			Hydrogen, Acetylene	Carbon disulphide
Dusts	IIIA		Combustible flyings	Wood shaving
	IIB		Non-conductive dust	Saw dust, flour
	IIIC		Conductive dust	Metal dust

KEY

- Zone 0: - Zone 20:
- Zone 1: - Zone 21:
- Zone 2: - Zone 22:



TEMPERATURE CLASSIFICATION

Class*	Surface Temperature
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

* Temperature classification is based on the maximum surface temperature of the equipment in normal use

CONTROLS, LIGHTING & JUNCTION BOXES

MANUFACTURER 19-21, avenue Henry Beaudalet
77380 Ozoir La Ferrière

EVNL 265 S/N : 15/1234567

108-254V 50-60Hz - I max : 1.1A

II 3 GD

Ex nA IIC T4 Gc -40°C < T.amb < +60°C

Ex tc IIIC T85°C Dc -40°C < T.amb < +60°C

IP66
LCIE 15 ATEX 1010X - IECEx LCIE 15.0018X

Temperature Classification | EPL

ATEX Group & Category
Gas Protection Concept
Dust Protection Concept
Ambient Environment

CABLE GLANDS & CONDUIT FITTINGS

II 2 GD :: Ex e :: IIC Gb :: Ex tb :: IIIC Db :: Tamb -40°C to +85°C IP66

Baseefa 08 ATEX 0003X - IECEx BAS 08.0001X

KOPEX-EX B46 1HT UK 1180 15/52 EXPQM0404

PROTECTION CONCEPTS

Protection Concepts	Primary	Type of Protection	EN/IEC Standard	Sub Concept	Gas Zones	Dust Zones			
By Enclosure	Ex d	Flameproof	60079-1	Ex db	1	-			
				Ex dc	2	-			
	Ex t	Dust proof	60079-31	Ex ta	-	20			
Ex tb				-	21				
Ex tc				-	22				
By Exclusion	Ex p	Pressurisation	60079-2	Ex pxb	1	21/22			
				Ex pyb	1	21			
				Ex pzc	2	22			
	Ex m	Encapsulation	60079-18	Ex ma	0	20			
				Ex mb	1	21			
By Equipment	Ex o	Oil immersion	60079-6	Ex ob	1	-			
				Ex q	Powder filling	60079-5	Ex qb	1	-
							Ex ic	2	21
	Ex i	Intrinsically safe	60079-11	Ex ia	0	20			
				Ex ib	1	21			
				Ex ic	2	22			
	Ex op	Optical radiation	60079-28	Ex op is	0/1/2	20/21/22			
				Ex op pr	1/2	21/22			
	Ex e	Increased safety	60079-7	Ex op sh	0/1/2	20/21/22			
				Ex eb	1	-			
Ex n	Non sparking	60079-15	Ex ec	2	-				
			Ex na	2	-				
			Ex nL	-	-				
			Ex nR	-	-				
Ex nC	Limited energy	60079-15	Ex nC	-	-				
			Ex nC	-	-				

