Typical North American Marking

Division Scheme				Zone Scheme						
Class I	Division 1	Groups A,B,C,D	T4	Class I	Zone 0	AEx	ia	IIC	T4	Ga
Hazard Class	Area Classification	Gas Group	Temperature Class	Hazard Class	Area Classification	Ex Protection Scheme	Protection Concept Code	Gas Group	Temperature Class	Equipment Protection Level (EPL)

Items in Blue are US Only. For Canada any new installations must be classified using the Zone system, while existing installations may either use Division or be re-classified to Zone. US installations may use either Division or Zone.

Classification of Divisions and Zones

Hazard Level	Division Scheme	Zone Scheme Gas/Dust	Type of Explosive Atmosphere
Continuous Hazard	Division 1	Zone 0 / Zone 20	Continually Present
Intermittent Hazard		Zone 1 / Zone 21	Likely to occur during normal operations
Hazard Under Abnormal Conditions	Division 2	Zone 2 / Zone 22	Not likely to occur during normal operations, but may occur for short periods

Enclosure Type Ratings (NEC & CEC)

Type	Area	Brief Definition
1	Indoor	General purpose
2	Indoor	Protection against angled dripping water
3, 3S	Indoor/ Outdoor	Protection against rain, sleet, dirt, snow and windblown dust
3R	Indoor/ Outdoor	Protection against rain, sleet, dirt and snow
4, 4X	Indoor/ Outdoor	Protection against rain, snow, hose directed water and corrosion
5	Indoor	Protection against rangled dripping water, dust, fibers, flyings
6	Indoor/ Outdoor	Protection against temporary submersion
6P	Indoor/ Outdoor	Protection against prolonged submersion
12, 12K	Indoor	Protection against circulating dust, fibers, flyings
13	Indoor	Protection against circulating dust, fibers, flyings, seepage

Atmosphere Groups

Substance	Hazard Class	Division Groups	Zone Groups
Acetylene	Class I Flammable Gases	Group A	IIC
Hydrogen		Group B	IIB + H2
Ethylene		Group C	IIB
Propane		Group D	IIA
Methane (Mines)		Group D	IIA
Combustible Metal Dusts	Class II Combustible Dusts	Group E	IIIC
Combustible Carbonaceous Dusts		Group F	IIIB
Combustible Dust not in Group E or F (Flour, Grain, Wood, Plastics, Chemicals)		Group G	IIIB
Combustible Fibers and Flyings	Class III Fibers and Flyings	Not Applicable	IIIA

Temperature Classification

Max. Surface Temperature	NEC 500 / CEC	NEC 5 05/ IEC - Group II
450 °C (842 °F)	T1	T1
300° C (572°F)	T2	T2
280° C (536°F)	T2A	
260° C (500°F)	T2B	
230° C (446°F)	T2C	
215° C (419°F)	T2D	
200° C (392°F)	T3	T3
180° C (356°F)	T3A	
165° C (329°F)	T3B	
160° C (320°F)	T3C	
135° C (275°F)	T4	T4
120° C (248°F)	T4A	
100° C (212°F)	T5	T5
85° C (185°F)	T6	T6

Typical ATEX & IECEx Marking

CE	0359	Ex	II	2	G	Ex	db	IIC	T4	Gb
Complies with European Directive*	Notified Body Number*	Specific Marking for Explosion Protection*	Equipment Group*	Equipment Category*	Environment*	Explosion Protection	Protection Type	Atmosphere Group	Temperature Class	Equipment Protection Level

*ATEX Only (ATEX 2014/34/EU

Equipment Categories & Protection Levels

ATEX Category	Equipment Protection Level	Typical Equipment Zone Suitability
1 G	Ga	Zones 0, 1, 2
1 D	Da	Zones 20, 21, 22
2 G	Gb	Zones 1, 2
2 D	Db	Zones 21, 22
3 G	Gc	Zone 2
3 D	Dc	Zone 22
M1	Ma	Very High Level of Protection for Mines
M2	Mb	High Level of Protection for Mines

Ingress Protection Codes [IEC 60529]

First Number (protect from solid bodies)		Second Number (protect from water)	
0	No Protection	0	No Protection
1	Objects > 50 mm	1	Vertical drip
2	Objects > 12.5 mm	2	Angled drip
3	Objects > 2.5 mm	3	Spraying
4	Objects > 1.0 mm	4	Splashing
5	Dust-Protected	5	Jetting
6	Dust-Tight	6	Powerful jetting
		7	Temporary immersion
		8	Continuous immersion
		9	High pressure & temperature water jet

Atmosphere Groups [ATEX & IECEx]

Group	Environment	Location	Typical Substance
I	Gases, Vapors and Mist	Coal Mining	Methane (Firedamp)
IIA		Surface and Other Locations	Methane Propane, etc.
IIB			Ethylene
IIC			Hydrogen, Acetylene, etc.
IIIA	Combustible Dusts		Combustible Flyings
IIIB			Non-Conductive
IIIC			Conductive

ATEX Categories vs Zones of Use[1]

Equipment Category ATEX 2014/34/EU	Zone of Use	
	Gas, Vapors, & Mist	Dust
Category 1	Zone 0, 1, 2	Zone 20, 21, 22
Category 2	Zone 1, 2	Zone 21, 22
Category 3	Zone 2	Zone 22

Note 1: Unless the explostion protection risk assessment states otherwise

Equipment Groups [ATEX]

Equipment Group	ATEX Equipment Category	Atmosphere	Equipment Protection Level	Required Protection Performance & Operation
I (Mines with Firedamp	M 1	Methane & Dust	Very High Ma	Two faults, Remain energized and functioning
I (Mines with Firedamp	M 2	Methane & Dust	High Mb	Severe normal operation, De-energize in exp. atm.
II (All Other Areas)	1G, 1D	Gas, Vapor, Mist, Dust	Very High	Two faults
II (All Other Areas)	2G, 2D	Gas, Vapor, Mist, Dust	High	One fault
II (All Other Areas)	3G, 3D	Gas, Vapor, Mist, Dust	Low	Normal operation