

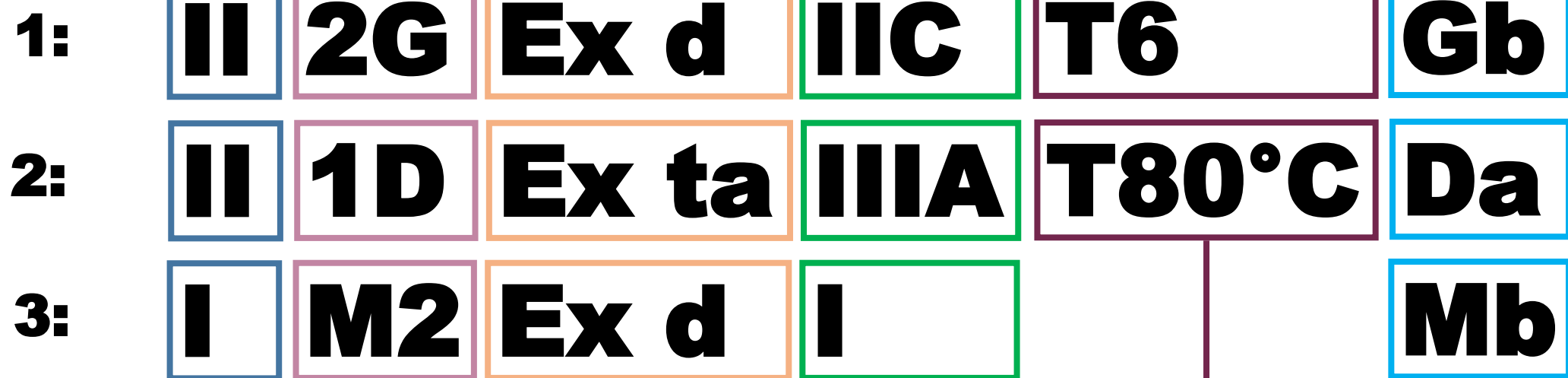
## Labeling of Explosion Proof Equipment According to ATEX Directives



Application	Equipment Group	Equipment Categorized by		Level of Protection		Equipment Category	Explosive Atmosphere Contains	Zone Classification
Mining	I	Required Performance in the Event of an Explosive Atmosphere	Remain Functional	Very High	Two Faults	M 1	Gas	
			De-energised	High	Normal Operation	M 2	Dust	
Other Industries	II	Expectancy of the Occurrence of an Explosive Atmosphere	Continuously for Long Periods or Frequently	Very High	Two Faults	1	Gas	Zone 0
							Dust	Zone 20
			Occasionally	High	One Fault	2	Gas	Zone 1
							Dust	Zone 21
			Unlikely or Infrequently and for a Short Period	Normal	Normal Operation	3	Gas	Zone 2
							Dust	Zone 22

### Example

Definition
Complies with European Directive
Notified Body Number
Specific Marking for Explosion Protection



Protection Symbol	Zones			Type of Protection
	0	1	2	
d		•	•	Flameproof enclosure
e		•	•	Increased safety
i	ia	•	•	Intrinsic safety
	ib		•	
	ic		•	
m	ma	•	•	Moulding
	mb		•	
	mc		•	
o		•	•	Oil immersion
q		•	•	Powder filling
n	nA		•	Non-sparking
	nC		•	Enclosed break
	nR		•	Restricted
	nL		•	Limited energy
p	px		•	Pressurised enclosure
	py		•	
	pz		•	
Op	Op is	•	•	Optical radiation
	Op pr		•	
	Op sh		•	
			•	

Protection Symbol	Zones			Type of Protection
	20	21	22	
tD	ta	•	•	Protection by enclosure
	tb		•	
	tc		•	
mD	maD	•	•	Encapsulation
	mbD		•	
	mcD		•	
iD	iaD	•	•	Intrinsic safety
	ibD		•	
	icD		•	
pD		•	•	Pressurised enclosure

Type of Environment	Group & Class	Hazardous Material in the Atmosphere						Temperature Class
Mines	I	Firedamp	Temperatures according to coal dust accumulation on equipment (< 150°C for coal mines or < 450°C for not coal mine tunnels)					
Explosive Gases	IIA	IIC	Ammonia	Ethanol	Petrol	Acetal-dehyde		
	IIB		Methane	Cyclohexane	Diesel Fuel			
				Ethane	n-Butane	Fuel Oil	n-Hexane	
Explosive Dusts	III	A	City Gas	Ethylene	Ethyl glycol	Ethyl ether		
			B	Acrylic nitrile	Ethylene oxide			
				C	Hydrogen	Acetylene		
		Attention: this list is only a selection of possible flammable mediums and is not complete!						
		For dust explosion proof, the max. surface temperature is directly shown (e.g. T80°C)						
				T1 <450° C				
				T2 <300° C				
				T3 <200° C				
				T4 <135° C				
				T5 <100° C				
				T6 <85° C				

Zone Classification/Equipment Category	Equipment Protection Level (EPL)		
Zone 0/1G			
Zone 1/2G	Ga		
Zone 2/3G		Gb	Gc
Zone 20/1D	Da		
Zone 21/2D		Db	Dc
Zone 22/3D			
NA/M1	Ma		
NA/M2	Mb		