شرکت فنی و مهندسی اصل فولاد

THE TABLE OF HAZARDOUS AREAS

ACCORDING TO ATEX DIRECTIVE

Gas

Zone	Category of Motors 1G	2G	3G	Method of Protection Ex-d	Ex-de	Ex-e	Ex-p	Ex-nA
0	X							
1	X	X		Temperature class and Enclosure group	Temperature class and Enclosure group	Temperature class	Temperature class	
2	X	X	X	Temperature class and Enclosure group	Temperature class and Enclosure group	Temperature class	Temperature class	Temperature class

Dust

Zone	Category of Motors 1D	2D	3D	Method of Protection tD-IP6x	tD-IP5x
20					
21		X		Temperature class	
22	Conductive dust	X		Temperature class	
	None Conductive dust	X	X	Temperature class	Temperature class

Temperature class and Enclosure group

Temperature class

Certificate by Notified Bodies mandatory

Temperature class

Temperature class

Declaration by Manufacture acceptable

Temperature class and Enclosure group for GAS atmospheres

Group	Temperature classes T1	T2	T3	T4	T5	T6
I						
IIA	Acetic acid, Acetone, Ammonia, Benzole, Benzene, Butanone, Carbon monoxide, Ethane, Ethyl acetate, Ethyl cloride, Methane, Methanol, Methyl acetate, Methyl alcohol, Methyl cloride, Naphtalene, Propane, Toluene, Xylene	Acetic anhydride, I amyl acetate, n butane, n butyl alcohol, Amylic alcohol, Butyl acetate, Cyclohexanon, Ethyl alcohol, Iso butylic alcohol, Liquefied gas, Natural gas, Prooyl acetate	Cyclohexane, Cyclohexanol, Decano, Diesel fuels, Casoline, Heating oil, Heptane, Hexane, Jet fuels, Pentane, Petroleum*	Acetaldehyde, Ether		
IIB	Coke-oven gas, Water gas(carburetted)	1,3-Butadiene, Ethylene, Ethylbenzene, Ethylene oxide	Hydrogen sulphide, Isoprene, Petroleum*	Ethyl ether		
IIC	Hydrogen	Acetylene				Carbon disulphide, Ethyl nitrare

*depending on composition

Temperature class

Temperature class	Maximum surface temperature Of electrical equipment Including 40°C ambience temperature	
	°C	°F
T1	450	842
T2	300	572
T3	200	392
T4	135	275
T5	100	212
T6	85	185

How to calculate temperature class for DUST

Dust ignition temperature	Airborne Tcl	On surface T5mm
↓ Safety temperature	Ts1 = 2/3 Tcl	Ts2 = T5mm-75k
↓ Maximum surface temperature	Tamm = the lowest between Ts1 And Ts2	
↓ Motor temperature class ≤ Tamm		