

# Temperature Classifications

Explosive atmospheres all have an auto-ignition temperature at which it will ignite spontaneously when in contact with heated surfaces or when heated. Equipment must be tested and classified so that the end user may determine if the product is suitable for the intended application. This temperature of the equipment is always considered to be any unprotected surface which is exposed to the atmosphere.

For equipment used in gases and vapours using types of protection increased safety, intrinsic safety, non-sparking the relevant temperature is that of any part of the equipment, both internal and external. These surfaces must be kept below 80% of the auto-ignition temperature of the atmosphere.

For Group I atmospheres any external surface must be kept below 150°C and any internal surface protected against the entry of coal dust must be below 450°C.

For Group III (explosive dust) equipment the surface temperature is always marked and the user must determine if the marked surface temperature is suitable for the application. In this case, for equipment suitable for dust atmospheres with adequate dust ingress protection by the enclosure, the unprotected surface is all the external surfaces of the equipment.

T1
T2
T3
T4
T5
T6

For Group II atmospheres the temperature classification is grouped into 6 different ranges, each higher than the next.

CLASS	SURFACE TEMPERATURE °C
T1	<450
T2	<300
T3	<200
T4	<135
T5	<100
T6	<85

This classification indicates to the end user the maximum temperature that the equipment might reach for their consideration. It is understood that equipment should not be installed in an explosive atmosphere where the surface temperature is greater than 80% of the auto-ignition temperature of the gas. For example, a piece of equipment with a T1 temperature classification may be suitable for a methane atmosphere which has an auto-ignition temperature of 580°C but it is not suitable for Acetylene with has an auto-ignition temperature of 425°C.