



ATEX *Guidelines*

The ATEX Directive Explained

WHAT IS A HAZARDOUS AREA?

A 'Hazardous Area' is an area in which special precautions are required when using electrical equipment due to the presence or chance of 'Explosive Atmospheres'.

ELECTRICAL EQUIPMENT MARKING

The electrical equipment that has been assessed and tested and found to be in compliance with the relevant European Harmonised Standard, shall be marked with the certification coding as described below.

ATEX MARKING - EX II 2 GD

Ex SpecificMark for Explosion Protection	II Equipment Group	2 Equipment Category	GD Defines suitability of use of Group II equipment in G as and/or D ust atmospheres
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CERTIFICATION CODE - E Ex e ib IIC T4

E Complies with A European Harmonised Standard	Ex For use in explosive atmospheres	e ib Protection Concepts	IIC Gas Group	T4 Temperature Classification
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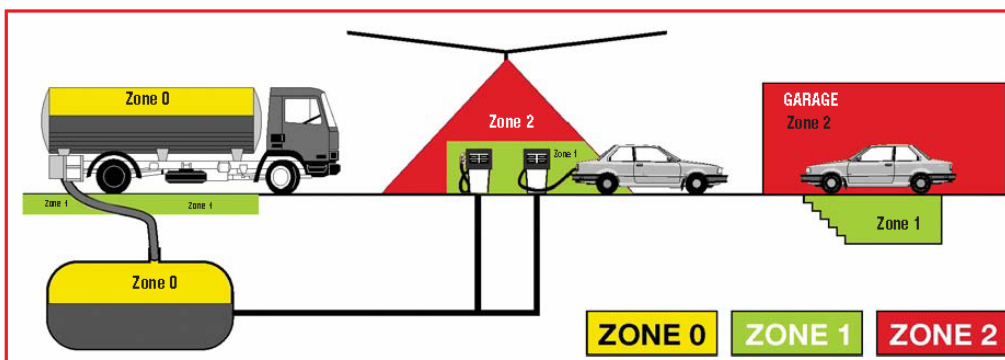
CATEGORIES & ZONES

Hazardous areas are further divided into Categories and Zones:

Categories

Zones

	Gases	Dusts	Zone Criteria
Category 1 – Very high protection	Zone 0	Zone 20	Explosive atmosphere is continuously present or present for long periods (>1,000 hours per annum)
Category 2 – High protection	Zone 1	Zone 21	Explosive atmosphere is likely to occur in normal operations (>10 hours, <1,000 hours per annum)
Category 3 – Normal protection	Zone 2	Zone 22	Explosive atmosphere is unlikely to occur in normal operations, if it does it will only occur for short periods (<10 hours per annum)



PROTECTION CONCEPTS

There are eight different recognised concepts of protection within Europe. These are detailed in the European EN50 series of Standards; 'electrical equipment for use in explosive atmospheres'. The most common concepts applicable to torches are:

Protection Concepts	Symbol	Zone	Standard	How it works
Increased Safety	Ex e	1 & 2	EN 50019	Design ensures no arcs, sparks or hot surfaces.
Non sparking	Ex n	2	EN 50021	No arcs, sparks or hot surfaces.
Intrinsic Safety	Ex ia Ex ib	0,1&2 1 & 2	EN 50020 EN50039	Limits energy of sparks, limits the temperature. " " " " " "

GAS GROUPS

The 'gases' are divided into two groups:

Group I for mines susceptible to Methane.

Group II for explosive gases in locations other than mines; this group is divided into three sub groups:

IIA, for atmospheres containing propane or gases of an equivalent hazard.

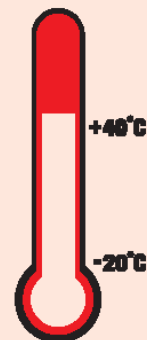
IIB, for atmospheres containing ethylene or gases of an equivalent hazard.

IIC, for atmospheres containing hydrogen or gases of an equivalent hazard.

TEMPERATURE CLASS

The auto-ignition temperature is the temperature, in °C, at which a gas will ignite spontaneously without another source ignition. As these temperatures do not correspond directly with the gas groupings, a 'temperature classification' was established. The temperature classification of the equipment to be used must not exceed that of the explosive atmosphere.

Temperature Class	Max Temp limit °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85



i.e. the maximum temperature at the lens of a T4 rated torch will not exceed 135°C.

The gas groupings and the temperature codes are reflected in the markings that appear on our torches. These markings identify to the user the type of explosive atmosphere in which it can be safely used.



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