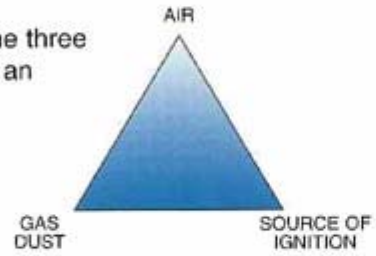
INTRODUCTION

Hazardous Location Fundamentals for Portable Lighting

The potential for an explosion and/or fire due to the combination of a flammable atmosphere and improper use of "heat producing" portable lighting makes it essential to understand the regulations, codes and classifications before you purchase the proper safety lighting equipment.

Ignition Triangle

The ignition triangle gives the three elements required to create an explosive result. The use of improper portable lighting can provide the source of ignition for a flammable atmosphere.



Hazardous Locations and the National Electrical Code

National Electrical Code

The National Electrical Code treats installation in hazardous locations in articles 500 through 516. Hazardous locations are classified by NEC definitions. The following are interpretations of these classifications and applications.

CLASS I LOCATIONS

Class I locations are those in which flammable gases or vapors are or may be present In sufficient quantities to produce explosive or flammable mixtures.

• Class I, Division 1:

Class I, Division 1 locations are where hazardous atmospheres may be present during normal operations. It may be present continuously, intermittently, periodically - or during normal repair or maintenance operations, or those areas where a breakdown in processing equipment releases hazardous vapors with the simultaneous failure of electrical equipment.

• Class I, Division 2:

Class I, Division 2 locations are those in which volatile flammable liquids or gases are handled, processed or used. Normally they will be confined within closed containers or in closed systems from which they can escape only in the case of rupture or deterioration of the containers or systems.

CLASS II LOCATIONS

Class II locations are those that are hazardous because of the presence of combustible dust.

• Class II, Division 1:

Class II, Division 1 locations include areas where combustible dust may be in suspension in the air under normal conditions in sufficient quantities to produce explosive or ignitable mixtures (Dust may be emitted into the air continuously, intermittently or periodically), or where failure or malfunction of equipment might cause a hazardous location to exist and provide an ignition source with the simultaneous failure of electrical equipment. Included also are locations in which combustible dust of an electrically conductive nature may be present.

• Class II, Division 2:

Class II, Division 2 locations are those in which combustible dust will not normally be in suspension nor will normal operations put dust in suspension, but where accumulation of dust may interfere with heat dissipation from electrical equipment or where accumulations near electrical equipment may be ignited.

Group A	Atmospheres containing acetylene
Group B	Atmospheres containing hydrogen, gases or vapors of equivalent hazard such as manufactured gas
Group C	Atmospheres containing ethyl-ether vapors, ethylene, or cyclo-propane
Group D	Atmospheres containing gasoline, hexane, naptha, benzene, butane, propane, alcohol, acetone, benzol, lacquer solvent vapors, or natural gas
Group E	Atmospheres containing metal dust - including aluminum, magnesium, and their commercial alloys, and other metals of similarly hazardous characteristics
Group F	Atmospheres containing carbon black, coal or coke dust
Group G	Atmospheres containing flour, starch, or grain dusts

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