

DEFINING HAZARDOUS LOCATIONS

HAZARDOUS LOCATIONS ARE CLASSIFIED IN THREE WAYS BY THE NATIONAL ELECTRICAL CODE (NEC): TYPE, CONDITION AND NATURE.

1

TYPE

The three types of hazardous conditions:

Class I – Gas and vapour present in the air

Class II – Presence of combustible dust

Class III – Areas where there are easily-ignitable fibers or flyings present

2

CONDITION

The two kinds of hazardous conditions:

Division 1 – Normal (the hazard would be expected to be present in everyday production operations or during frequent repair and maintenance activity).

Division 2 – Abnormal (when the hazardous material is expected to be confined within closed containers or closed systems and will be present only through accidental rupture, breakage or unusual faulty operation).

3

NATURE

The nature of the hazardous substance:

Gases and vapours of Class I locations are broken into four groups by the codes: A, B, C, D:

Group A – Acetylene: makes up a small percentage of hazardous locations; extremely high explosion pressures.

Group B – Hydrogen and other materials with similar characteristics

Group C and D – comprise the greatest percentage of all Class I hazardous locations. Group D has many of the most common flammable substances such as butane, gasoline, natural gas and propane.

Class II, dust locations, are broken into groups by the codes: E, F, G:

Group E – metal dusts such as aluminum and magnesium

Group F – materials such as carbon black, charcoal dust, coal and coke dust

Group G – materials such as grain dusts, flour, starch and cocoa