

**CLASSES**

- Class I, Gases**  
 Areas where inflammable gases or vapors may be present in sufficient quantities to produce explosive or flammable mixtures.
- Class II, Dust**  
 Areas where combustible dust are present.
- Class III, Fibers**  
 Areas where ignitable fibers or flyings are present in sufficient quantities to produce ignitable mixtures.

**DIVISIONS**

- Division 1, Always Present**  
 Areas where the hazardous condition normally present either continuously or periodically.
- Division 2, Not Normally Present**  
 Areas where the hazardous condition is present due to accidental nature, leakage or unusual faulty operation of a closed container or system.

**GROUPS**

- Class I**  
 Group A - Acetylene  
 Group B - Hydrogen  
 Group C - Ether  
 Group D - Gasoline  
**Class II**  
 Group E - Metal Dust  
 Group F - Coal Dust  
 Group G - Grain Dust

**CLASSIFICATION OF HAZARDOUS AREAS**

NEC publication 79-13 defines the guidelines for classifying hazardous areas. Instead of using Classes and Divisions, the term Zones is used as defined below.

**Zone 0** - Zone 0 is an area in which an explosive gas-air mixture is continuously present or present for long periods. (This is comparable to Class I, Division 1 areas as defined by the National Electric Code). Generally, most industrial users try to keep all electrical equipment out of Zone 0 areas. The only equipment approved for use in Zone 0 applications is intrinsically safe equipment.

**Zone 1** - Zone 1 is defined as an area in which an explosive gas-air mixture is likely to occur in normal operations. Zone 1 is also comparable to Class I, Division 1 applications.

**Zone 2** - Defined as an area in which an explosive gas-air mixture is not likely to occur and if it does, it is only for a short period of time. (This is comparable to a Class I, Division 2 location area as defined by the NEC.)

**Zone 20** - A place in which an explosive dust atmosphere is continuously present.

**Zone 21** - A place in which an explosive dust atmosphere is likely to occur in normal operation occasionally.

**Zone 22** - A place in which an explosive dust atmosphere is not likely to occur in normal operation, but if it does only occurs for short periods.

Note: Class III locations (fibers and flyings) are covered in Zone 10, 21 + 22 areas.

**CLASSIFICATION COMPARISON**

Hazardous Material	NEC U.S. Standards	IEC European Standards
Gas or Vapor	Class I, Division 1	Zone 0 & Zone 1
	Class I, Division 2	Zone 2
Dust	Class II, Division 1	Zone 20
	Class II, Division 2	Zone 21
Fibers or Flyings	Class III, Division 1	Zones 20 + 21
	Class III, Division 2	Zone 22

**TEMPERATURE MARKINGS**

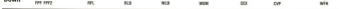
Maximum Operating Temperatures	Temperature (T) Code or Identification Number*
°C °F	
450 840	T1
300 572	T2
250 536	T2A
260 500	T2B
230 446	T2C
215 419	T2D
200 392	T3
180 356	T3A
165 323	T3B
180 323	T3C
135 275	T4
120 248	T4A
180 212	T5
85 185	T6

\* Based on 40°C (104°F) ambient

**LIGHTING PRODUCTS - FOR INFORMATION, CALL (713) 943-0340**
**Fluorescents**

**Explosion Proof Lighting**

**Hazardous**

**Wash Down**

**Floodlights**

**Incandescents**

**Compact Fluorescents**

**Misc.**


ENCLOSURE TYPES			UL STANDARDS		
Enclosure Type	Intended Use	Equivalent IP Code Rating	Number	Title	
1	Indoor use, limited amounts of falling dirt	30	781	Portable electrical lighting units for use in hazardous (classified) locations	
3	Outdoor use, rain, sleet, wind blown dust, external formation of ice	54			
3B	Outdoor use, rain, sleet, external formation of ice	14			
3S	Outdoor use, rain, sleet, wind blown dust, external mechanisms operable when ice laden	54			
4	Indoor or outdoor use, wind blown dust and rain, splashing water, hose directed water, external formation of ice	66			
4X	Indoor or outdoor use, wind blown dust and rain, splashing water, hose directed water, corrosion, external formation of ice	90	644	Electrical lighting fixtures for use in hazardous (classified) locations	
5	Indoor use, settling airborne dust, falling dirt, noncorrosive liquids	52			
6	Indoor or outdoor use, hose directed water, temporary submersion, external formation of ice	67			
6P	Indoor or outdoor use, hose directed water, prolonged submersion, external formation of ice	67			
7	Indoor use, Class I, Division 1, Groups A, B, C, and D hazardous locations, oil-break equipment				
8	Indoor use, Class I, Division 1, Groups A, B, C, and D hazardous locations, oil-immersed equipment				
9	Indoor use, Class II, Division 1, Groups E, F, and G hazardous locations, oil-break equipment				
10	Mining applications				
12	Indoor use, circulating dust, falling dirt, dripping	52			
12K	Indoor use, circulating dust, falling dirt, dripping noncorrosive liquids, provided with knockouts	52			
13	Indoor use, lint, dust, spraying of water, oil, and noncorrosive coolant	54	604	Emergency lighting and power equipment	
<b>Ingress Protection (IP) Codes</b>					1500*
First Number		Second Number			
0	No Protection	0	No Protection	1500A**	Marine Supplement
1	Objects greater than 50mm	1	Vertically Dripping Water		
2	Objects greater than 12mm	2	70° to 90° Dripping Water	6750	Safety of LED Equipment
3	Objects greater than 2.5mm	3	Sprayed Water		
4	Objects greater than 1mm	4	Splashed Water		
5	Dust Protected	5	Water Jets		
6	Dust Tight	6	Powerful Water Jets		
		7	Effects of Immersion		
		8	Inherently Immersion		

\* Replaces 1570, 1571 &amp; 1572

\*\* Replaces 150

**NEMA & ANSI'S FLOODLIGHT BEAM DESCRIPTIONS**

Asymmetrical beam floodlights may be designated by a combination of horizontal and vertical beam spreads in that order; a floodlight with a horizontal beam spread of 75 degrees (Type 5) and a vertical beam of 35 degrees (Type 3) would be designated as Type 5x3 floodlight.

**Beam Spread Degrees**

10 up to 15

18 up to 29

29 up to 46

46 up to 70

70 up to 100

100 up to 130

130 and up

**NEMA Type**

1

2

3

4

5

6

7

**ANSI'S LATERAL LIGHT DISTRIBUTIONS**

Type I



Type II



Type III



Type IV



Type V



Type VI