

Classes	Groups	Divisions	
		1	2
Class I	Examples		
Location in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.	Group A: Acetylene Group B: Hydrogen Group C: Ethylene Group D: Propane, fuels, solvents	Locations where hazardous material exists under normal operating conditions or through breakdown or repair.	Locations where hazardous materials are expected to be confined within closed containers of closed systems but may become present through a leak or process failure.
Class II	Examples		
Locations that are hazardous because of the presence of combustible dust.	E: Metal dusts F: Carbon dust G: Combustible dust, flour, grain, wood, plastic, chemicals	Combustible dust is in the air under normal operating conditions in quantities sufficient to produce explosive or ignitable mixtures or through breakdown or repair.	Combustible dust may be in the air in sufficient quantities to produce an explosion due to abnormal operations or failure of electrical equipment.
Class III			
Locations that are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.	There are no defined groups. Examples are textiles, woodworking, paper fibers.	Easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used.	Easily ignitable fibers are stored or handled other than in the process of manufacture.

Methods of Protection			
Explosionproof (XP) Class I, Division 1, 2	Dust-Ignitionproof (DIP) Class II, Division 1, 2	Intrinsically Safe (IS) Class I, Division 1, 2 Class II, Division 1, 2 Class III, Division 1, 2	Nonincendive (NI) Class I, Division 2 Class II, Division 2 Class III, Division 1, 2
Apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor that may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and that operates at such an external temperature that a surrounding flammable atmosphere will not be ignited thereby.	Equipment enclosed in a manner that excludes dust and does not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specified dust on or in the vicinity of the enclosure.	Equipment not capable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific flammable or combustible atmospheric mixture in its most easily ignitable concentration.	Equipment having electrical circuitry that is incapable, under normal operating conditions, of causing ignition of a specified flammable gas-air, vapor-air, or dust-air mixture due to arcing or thermal means.

This material is for reference only. Refer to *The NEC® 2005 Handbook, NFPA 70: National Electrical Code® International Electrical Code® Series* (Quincy, MA, 2005) for authoritative and complete documentation.

