

**General Facts for Discussion  
About  
Hazardous Locations**

*(This NEC Study Guide was prepared by Gaylord Poe © 2011)*

1. Excluding the “Zone” classification system, Hazardous Locations are classified as Class 1, Class 2, and Class 3. Each of these classifications consists of two Divisions.
2. After reviewing NEC Art. 500.5 this generalization can be made: When defining the “Divisions” of each classification, “Division 1” means that the hazard is present during normal operations and “Division 2” means that the hazard is present only during accidental conditions, malfunction conditions, or certain conditions of storage.
3. Class 1 locations are locations that contain flammable gases or vapors. Class 2 locations are locations that contain combustible dusts. Class 3 locations are locations that contain easily ignitable fibers or flyings.
4. Gasoline dispensing is a Class 1 location. A flour processing area is a Class 2 location. A woodworking shop is a Class 3 location.
5. In general, equipment that is listed for Class I locations is not “automatically” suitable for use in Class II and Class III locations. In other words, the Classifications are not in a certain order with Class 1 being “the best”. “Class 1”, “Class 2”, and “Class 3” are just names. The type of hazard present for each Classification is different and is addressed differently.
6. Junction boxes in Class I Division 2 locations do not have to be explosion proof (exception as required).
7. After reviewing Art 501.15 this generalization can be made: Seals must be installed ahead of all arcing and sparking devices and at all boundaries.
8. For Class I Division 1 and Division 2 locations, conduit seals required at boundaries can be on either side of the boundary under specific conditions.
9. In general, motors in Class I Division 1 locations have to be specifically listed for Class I Division 1 locations. It should be noted that there are provisions in 501.125 (A) (2) for using motors not specifically listed for Class I Division 1 locations by means of purging with fresh air, or isolating with an inert gas, or submerging in specific liquids.
10. Motors identified for use in Class I Division 1 locations are OK for use in Class I Division 2 locations.

11. Conduits and cables for Intrinsically Safe Systems have to be sealed only at the boundaries.
12. In commercial garages, the “GFCI protected receptacle” rules apply only to 125–volt, single phase, 15- and 20-ampere receptacles in the shop area that are installed in areas where electrical diagnostic equipment, electrical hand tools, or portable lighting equipment are intended to be used.
13. In commercial garages, care must be taken when installing plug-in type retractable work lights. They not only must be constructed a certain way, guarded and non-conductive but most importantly they must not be able to enter the hazardous area unless they are identified as suitable for the hazardous location.
14. In general, customer waiting areas and general office areas adjacent to shop areas of commercial garages must be cut-off or ventilated to avoid being included in the classified location.
15. When a Minor Repair Garage is used as “quick lube” store, pits or depressions below floor areas can become totally unclassified by complying with the ventilation requirements of 511.3(D)(3)(a).