Article 503
Class III Hazardous (Classified) Locations

According to 500.5(D), a Class III location is an area where easily ignitable fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures, but may collect around heat-generating machinery or luminaires.

- A Class III, Division 1 location is an area where ignitable fibers or flyings are manufactured, handled or used. Such areas include textile mills, clothing manufacturing plants, and facilities that create sawdust and flyings by pulverizing or cutting wood.
- A Class III, Division 2 location is a location where easily ignitable fibers are stored or handled other than in the manufacturing process.

503.1 General

The general requirements contained in Chapters 1 through 4, as well as the requirements of Article 503, apply to the electric wiring and equipment in Hazardous Class III locations [500.1].

Exception: As modified by this article.

Equipment installed in Class III locations shall be able to function without developing surface temperatures high enough to cause spontaneous ignition.

503.3 Wiring Methods

The wiring methods permitted in Class III locations include:

(A) and (B) Class III, Divisions 1 and 2

Rigid metal conduit, steel intermediate metal conduit, rigid nonmetallic conduit, electrical metallic tubing, dusttight wireways, MI and MC cable with listed fittings.

(1) Boxes and Fittings. Boxes and fittings that are dusttight (not required to be dust-ignitionproof).

(2) Flexible Connections. Liquidtight flexible conduit with listed fittings, liquidtight flexible nonmetallic conduit with listed fittings, or flexible cord, in accordance with the installation requirements of 503.10.

503.4 Switches, Circuit Breakers, Motor Controllers and Fuses

Enclosures for switches, circuit breakers, motor controllers and fuses, including pushbuttons, relays and similar devices intended to interrupt current during normal operation in Class III locations shall be dusttight. Figure 503-1

AUTHOR'S COMMENT: According to Article 100, dusttight means that it has been constructed so dust will not enter the enclosing case under specified test conditions.

503.5 Control Transformers

Control transformers installed in Class III locations shall be installed within dusttight enclosures that comply with the temperature limitation in 503.1.

503.6 Motors and Generators

Motors, generators and other rotating electrical equipment installed in Class III locations shall be totally enclosed nonventilated, pipe-ventilated, or fan-cooled.

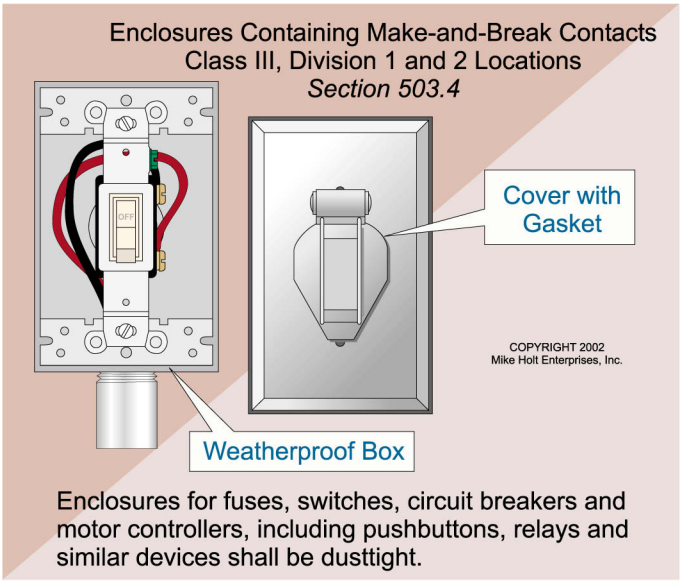

Figure 503-1

Article 511 Commercial Garages, Repair and Storage

1. The requirements in Article 511 apply to locations used for service and repair operations in connection with self-propelled vehicles such as _____, in which volatile flammable liquids or flammable gases are used for fuel or power.
   (a) buses (b) trucks (c) tractors (d) all of these

2. Parking garages used for parking or storage and where no repair work is done except for exchange of parts and routine maintenance requiring no use of electrical equipment, open flame, welding, or the use of volatile flammable liquids, are not classified as hazardous locations.
   (a) True (b) False

3. The _____ of alcohol-based windshield washer fluid shall not cause the areas used for service and repair operations in connection with self-propelled vehicles to be classified as hazardous.
   (a) storage (b) handling
   (c) dispensing into motor vehicles (d) any of these

4. For each floor area inside a commercial garage, the entire area up to a level of _____ in. above the floor shall be considered to be a Class I, Division 2 location.
   (a) 6 (b) 12 (c) 18 (d) 24

5. Any pit or depression below a commercial garage floor level shall be considered to be a Class I, Division _____ location up to floor level.
   (a) 1 (b) 2 (c) 3 (d) not classified

6. Raceways embedded in a masonry wall or buried beneath a floor shall be considered _____.
   (a) outside the hazardous area if any extensions pass through such areas
   (b) within the hazardous area if any connections or extensions lead into or through such areas
   (c) hazardous if beneath a hazardous area
   (d) outside any hazardous location

7. A permanently mounted luminaire (fixture) in a commercial garage and located over lanes on which vehicles are commonly driven shall be located not less than _____ ft above floor level.
   (a) 10 (b) 12 (c) 14 (d) none of these

Chapter 6 – Special Equipment

Article 600 Electric Signs and Outline Lighting

This article covers the installation of conductors and equipment for electric signs and outline lighting as defined in Article 100. Electric signs and outline lighting includes all products and installations utilizing neon tubing, such as signs, decorative elements, skeleton tubing, or art forms.

Article 604 Manufactured Wiring Systems

The provisions of Article 604 apply to field-installed manufactured wiring systems used for branch circuits, remote-control circuits, signaling circuits, and communications circuits in accessible areas. The components of a listed manufactured wiring system can be assembled together at the jobsite.

Article 605 Office Furnishings (Wired Partitions)

This article covers electrical equipment, lighting accessories, and wiring systems used to connect, or contained in or on relocatable partitions. Partitions can be fixed or freestanding and can have communications, signaling and fiber-optic wiring in addition to wiring for receptacles and lighting.

Article 620 Elevators, Escalators, Moving Walks and Stairway Chair Lifts

Article 620 covers the installation of electrical equipment and wiring used in connection with elevators, dumbwaiters, escalators, moving walks, wheelchair lifts, and stairway chair lifts.

Article 625 Electric Vehicle Charging Systems

Article 625 covers conductors and equipment external to electric vehicles that are used for electric vehicle charging. This only applies to automotive-type vehicles for highway use. This article was added to the 1996 *NEC* in response to the Federal Clean Air Act requiring certain states to have zero emission (electric) vehicles before the year 2003. Electric vehicle charging is expected to constitute one of the largest loads for dwelling units and overnight charging will be encouraged by the electric utilities.

Article 630 Electric Welders

Article 630 covers the wiring of arc welders, resistance welders and other welding equipment connected to an electric supply system.

Article 640 Audio Signal Processing, Amplification and Reproduction Equipment

This article covers equipment and wiring for audio signal generation, recording, processing, amplification and reproduction, distribution of sound, public address, speech input systems, temporary audio system installations, and electronic musical instruments, such as synthesizer-keyboard type organs, electric guitars, and electronic drums/percussion instruments.

Article 645 Information Technology Equipment Room

Article 645 covers equipment, power-supply wiring, equipment interconnecting wiring and grounding of information technology equipment and systems, including terminal units in an information technology equipment room.

Article 647 Sensitive Electronic Equipment

A technical power system (called balanced power by some) is a separately derived 120V line-to-line, single-phase, 3-wire system with 60V-to-ground.

Article 680 Swimming Pools, Spas, Hot Tubs, and Fountains

The scope of Article 680 is limited to the installation of electric wiring and equipment that supplies swimming, wading, therapeutic and decorative pools, fountains, hot tubs, spas and hydromassage bathtubs, whether permanently installed or storable.

Article 690 Solar Photovoltaic Systems

The provisions of Article 690 apply to solar photovoltaic electrical energy systems including the array circuit(s), inverter(s), and controller(s) for such systems. Solar photovoltaic systems within the scope of Article 690 may be interactive with other electrical power production sources or stand alone, with or without electrical energy storage such as batteries.