

cleaners, and solvent distillation units that contain Class I liquids and are located in ventilated areas shall be in accordance with the following:

- (1) The area within 915 mm (3 ft) in all directions from any such container or equipment and extending to the floor or grade level shall be classified as Class I, Division 1 or Zone 1, whichever is applicable. [33:6.5.5.1(1)]
- (2) The area extending 610 mm (2 ft) beyond the Division 1 or Zone 1 location shall be classified as Class I, Division 2 or Zone 2, whichever is applicable. [33:6.5.5.1(2)]
- (3) The area extending 1525 mm (5 ft) horizontally beyond the area described in 516.4(2) up to a height of 460 mm (18 in.) above the floor or grade level shall be classified as Class I, Division 2 or Zone 2, whichever is applicable. [33:6.5.5.1(3)]
- (4) The area inside any tank or container shall be classified as Class I, Division 1 or Zone 0, whichever is applicable. [33:6.5.5.1(4)]
- (5) Sumps, pits, or belowgrade channels within 3.05 m (10 ft) horizontally of a vapor source shall be classified as Class I, Division 1 or Zone 1. If the sump, pit, or channel extends beyond 3.05 m (10 ft) from the vapor source, it shall be provided with a vapor stop or be classified as Class I, Division 1 or Zone 1 for its entire length.

For the purposes of electrical area classification, the Division system and the Zone system shall not be intermixed for any given source of release. [33:6.2.3]

Electrical wiring and utilization equipment installed in these areas shall be suitable for the location, as shown in Figure 516.4. [33:6.5.5.2]

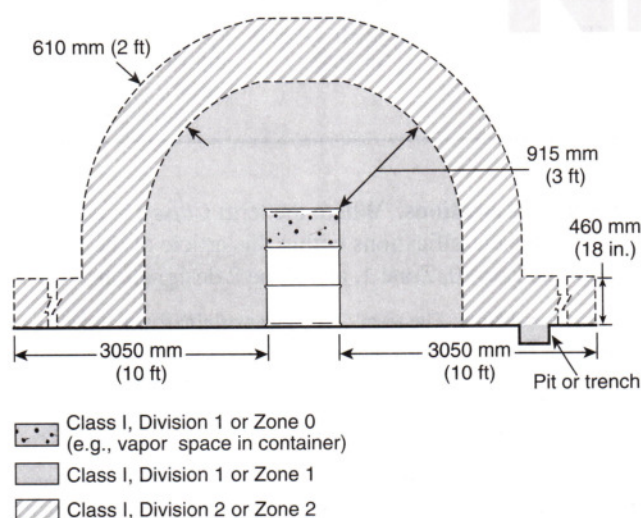


FIGURE 516.4 Electrical Area Classification for Class I Liquid Operations Around Open Containers, Supply Containers, Waste Containers, Spray Gun Cleaners, and Solvent Distillation Units. [33:Figure 6.5.5.2]

Part III. Spray Application Processes

516.5 Area Classification. For spray application processes, the area classification is based on quantities of flammable vapors, combustible mists, residues, dusts, or deposits that are present or might be present in quantities sufficient to produce ignitable or explosive mixtures with air.

Many steps are required to properly classify a hazardous location. Although the NEC® provides general area classifications in Articles 501, 502, 503, 505, and 506, it does not classify specific locations. The NEC classifications for specific occupancies or processes have been extracted from other NFPA documents. The classifications from those documents are based on the premise that all applicable requirements of the document have been met. Deviations in on-site conditions, such as process conditions, area ventilation, and room construction, from those assumed by the document may alter the general classification. Those responsible for the specific area classification must consider the basis for the general classifications to determine the applicability to a specific location.

The determination of the extent of hazardous areas involved in spray application requires an understanding of the multiple hazards of flammable vapors, mists, powders, and highly combustible deposits applied at each location.

See also

NFPA 33 and **NFPA 34**, which contain the specific construction and installation requirements used to develop the area classifications in Article 516

(A) Zone Classification of Locations.

(1) Classification of Locations. The Zone system of electrical area classification shall be applied as follows:

- (1) The inside of closed containers or vessels shall be considered a Class I, Zone 0 location.
- (2) A Class I, Division 1 location shall be permitted to be alternatively classified as a Class I, Zone 1 location.
- (3) A Class I, Division 2 location shall be permitted to be alternatively classified as a Class I, Zone 2 location.
- (4) A Class II, Division 1 location shall be permitted to be alternatively classified as a Zone 21 location.
- (5) A Class II, Division 2 location shall be permitted to be alternatively classified as a Zone 22 location. [33:6.2.2]

(2) Classification Systems. For the purposes of electrical area classification, the Division system and the Zone system shall not be intermixed for any given source of release. [33:6.2.3]

In instances of areas within the same facility classified separately, Class I, Zone 2 locations shall be permitted to abut, but not overlap, Class I, Division 2 locations. Class I, Zone 0 or Zone 1 locations shall not abut Class I, Division 1 or Division 2 locations. [33:6.2.4]

(3) Equipment. Open flames, spark-producing equipment or processes, and equipment whose exposed surfaces exceed the