



Spill control systems are rapidly becoming standard equipment in facilities containing stationary battery systems. Batteries contain sulfuric acid and an unintentional release could cause a number of potential hazards including:

- Personnel Injury
- Equipment Damage
- Battery Rack Corrosion
- Building / Facility Damage - Large spills have the potential to weaken floor support structures and leak to additional floors, causing extensive damage to building.
- Environmental Clean-up - Lead particulates and other toxic or hazardous substances may be contained in electrolyte; spillage could result in an environmental clean-up costing thousands of dollars.

In addition to the potential spill clean up costs, compliance is also an issue. A number of agencies recognize the need for containment and have addressed this subject in their regulations. The IFC (International Fire Code), NFPA (National Fire Protection Association), and UFC (Uniform Fire Code), and have all outlined the circumstances in which spill containment would be required.

BPS provides design and installation of spill mitigation products including EnviroGuard and Acran. Barrier systems can be installed around new or existing battery strings. A typical spill containment system is comprised of a barrier surround and acid safe resistant floor coating which prevents the flow of electrolyte to other areas. Inside the barrier, specialized mats stand ready to immediately absorb and neutralize any spilled electrolyte.

When you consider the costs associated to a potential environmental spill clean-up, spill containment makes excellent sense.



CODE REFERENCES

UNIFORM FIRE CODE WITH SUPPLEMENT ARTICLE 64

- 6401 Scope** - Stationary lead-acid battery systems having an electrolyte capacity of more than 100 gal (378.5 L) in sprinklered buildings or 50 gal (189.3 L) in unsprinklered buildings used for facility standby power, emergency power, or uninterrupted power supplies shall be in accordance with Article 64.
- 6404.4 Spill Control** - Each rack of batteries, or group of racks shall be provided with a liquid tight 4-inch spill-control barrier which extends at least 1 inch beyond the battery rack in all directions.
- 6404.5 Neutralization** - An approved method to neutralize spilled electrolyte shall be provided. The method shall be capable of neutralizing a spill from the largest lead-acid battery to a pH between 7.0 - 9.0.

IFC INTERNATIONAL FIRE CODE 2006

- 608.1 Scope** - Stationary storage lead-acid battery systems having an electrolyte capacity of more than 50 gallons (189 L) for flooded lead acid, nickel cadmium (Ni-Cd) and valve-regulated lead acid (VRLA) or 1,000 pounds (454 kg) for lithium-ion, used for facility standby power, emergency power, or uninterrupted power supplies, shall comply with this section and Table 608.1.
- 608.5 Spill control and neutralization.** An approved method and materials for the control and neutralization of a spill of electrolyte shall be provided in areas containing lead-acid, nickel-cadmium or other types of batteries with free-flowing liquid electrolyte. For purposes of this paragraph, a "spill" is defined as any unintentional release of electrolyte. Exception: VRLA, lithium-ion or other types of sealed batteries with immobilized electrolyte shall not require spill control.
- 608.5.1 Nonrecombinant battery neutralization.** For battery systems containing lead-acid, nickel-cadmium or other types of batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill from the largest lead-acid battery to a pH between 7.0 and 9.0.
- 608.5.2 Recombinant battery neutralization.** For VRLA or other types of sealed batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3 percent of the capacity of the largest VRLA cell or block in the room to a pH between 7.0 and 9.0. Exception: Lithium-ion batteries shall not require neutralization.

NFPA -1 NATIONAL FIRE PROTECTION ASSOCIATION 2003

52.3.4 Spill Control

- 52.3.4.1 Rooms, buildings, or areas containing free-flowing liquid electrolyte in individual vessels having a capacity of more than 55 gal (208 L) or multiple vessels having an aggregate capacity exceeding 1000 gal (3785 L) shall be provided with spill control to prevent the flow of liquids to adjoining areas.
- 52.3.4.2 An approved method and materials for the control of a spill of electrolyte shall be provided. The method shall be capable of controlling a spill from the single largest vessel.

52.3.5 Neutralization

- 52.3.5.1 An approved method to neutralize spilled electrolyte shall be provided.
- 52.3.5.2 The method shall be capable of neutralizing a spill from the largest lead-acid battery to a pH between 7.0 and 9.0.

OSHA 1910.268 Telecommunications Battery Handling: 1910.268 (b)(2)(i) Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

1926.441 Batteries and Battery Charging: 1926.441 (a)(7) Facilities shall be provided for flushing and neutralizing spilled electrolyte and for fire protection.

WISHA 296-155-437 Batteries and Battery Charging: (1)(g) Facilities shall be provided for flushing and neutralizing spilled electrolyte and for fire protection.

296-32-220 Telecommunications Battery Handling: (1)(d) Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

Standard 1187-1996 5.1 (g) Provisions for neutralizing, containing and safely disposing of acid electrolyte in accordance with governmental regulations should be included.

Standard 484-1996 5.1(g) Portable or stationary water facilities should be provided for rinsing spilled electrolyte. Provisions for neutralizing, containing and safely disposing of acid electrolyte in with governmental regulation should be included.

Always check with your local authorities to determine your company's responsibilities and compliance requirements

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BPS Spill Mitigation, # 311-1001 Rev. 06-20-11