

Explosion-proof requirements for lead-acid battery cabinets





Overview

Ventilation shall be provided to ensure diffusion of the gases from the battery and to prevent the accumulation of an explosive mixture. Racks and trays shall be substantial and shall be treated to make them resistant to the electrolyte. What are the safety requirements related to batteries & Battery rooms?

Employers must consider exposure to these hazards when developing safe work practices and selecting personal protective equipment (PPE). That is where Article 320, Safety Requirements Related to Batteries and Battery Rooms comes in.

Do lead-acid batteries release hydrogen gas?

It is common knowledge that lead-acid batteries release hydrogen gas that can be potentially explosive. The battery rooms must be adequately ventilated to prohibit the build-up of hydrogen gas. During normal operations, off gassing of the batteries is relatively small.

What are the requirements for a lead-acid battery ventilation system?

The ventilation system must prevent the accumulation of hydrogen pockets greater than 1% concentration. Flooded lead-acid batteries must be provided with a dedicated ventilation system that exhausts outdoors and prevents circulation of air in other parts of the building.

Which electrical appliances should be explosion proof?

The lighting and electrical appliances used in those areas having foreseeable hazard of accumulation of explosive gases should also be of the explosion proof type; The battery charger should be suitably rated and protected against electrical faults.

Do flooded lead-acid batteries need ventilation?

Flooded lead-acid batteries must be provided with a dedicated ventilation



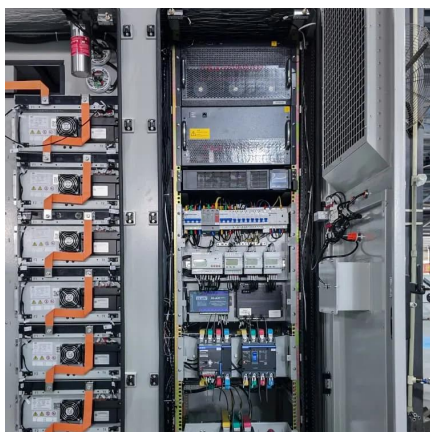
system that exhausts outdoors and prevents circulation of air in other parts of the building. VRLA batteries require comparatively lower ventilation, usually enough to remove heat and gases that might be generated.

What are the requirements for battery installation?

§ 111.15-5 Battery installation. (a) Large batteries. Each large battery installation must be in a room that is only for batteries or a box on deck. Installed electrical equipment must meet the hazardous location requirements in subpart 111.105 of this part. (b) Moderate batteries.



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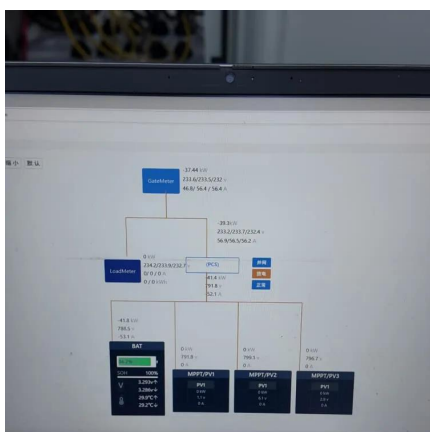


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are designed to mitigate hazards associated ...



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