Lithium ion battery storage standards

Lithium ion battery storage standards

The .gov means it"s official. Federal government websites often end in .gov or .mil. Before sharing sensitive information, make sure you"re on a federal government site.

The site is secure. A lock () or https:// ensures that you are connecting to the official website and that any information you provide is encrypted and transmitted securely.

Standards are norms or requirements that establish a basis for the common understanding and judgment of materials, products, and processes. Standards are an invaluable tool in industry and business, because they streamline business practices and provide a level playing field for businesses to develop products and services. They are also critical to ensuring that products and services are safe for consumers and the environment.

2024 Vision Award Winners»More K-12 Schools Leaning on Solar Energy» New Summit "Elevates" Facility Executives» Mowing Masters at Kohler Golf Courses»

Early in 2024, the International Code Council published its International Fire Code (IFC) 2024. That code, like the International Building Code (IBC) 2024 and the National Fire Protection Association (NFPA) 855, provides updated guidelines for the safe storage of lithium-ion batteries. But unfortunately, these updated guidelines – although helpful – do not fully address all the questions facility managers may have.

Below is an overview of what the current codes cover and do not cover, and what facility managers should do to protect tenants, buildings, and communities while the industry awaits more comprehensive updates.

The current codes and standards focus far more on energy storage systems (ESS) than indoor battery storage applications. As defined by the NFPA, an ESS is an assembly of devices capable of storing energy to supply electrical energy for future use. Indoor battery storage, on the other hand, simply refers to areas where lithium-ion and other batteries are housed for future use or disposal and does not include manufacturing or testing facilities.

The same problem arises in separation requirements. The guidelines suggest three-foot separations between each battery group for a given ESS, but again these separations are based on a MAQ for ESS and not for indoor storage applications.

Furthermore, the codes do not address variations from standards in testing. Some battery types and arrangements represent less of a fire hazard than others. Indeed, some manufacturers claim that their lithium-ion chemistries, along with their monitoring systems, greatly reduce the potential for thermal runaway, which is an uncontrollable self-heating state. Other variables, such as state of charge, cell capacity, types of

packaging, and storage height, differ from one application to another. It therefore is unrealistic to classify all storage arrangements in the same way.

In the absence of comprehensive, detailed guidelines for indoor storage of lithium-ion batteries, facility managers and building owners can take steps to reduce the risk of fire. One option is to follow guidelines from insurance underwriters. These tend to be more comprehensive and stricter than the NFPA, IBC, and IFC codes and standards but still, these guidelines apply to very specific battery types and arrangements.