

IEEE Guide for Selection of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications

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Abstract: Methods for selecting the appropriate type of valve-regulated, immobilized-electrolyte, recombinant lead-acid battery for any of a variety of potential stationary float applications are described.

Keywords: absorbed electrolyte, dryout, electrolysis, failure mechanisms, float voltage, gelled electrolyte, grid corrosion reaction, hydrogen evolution, oxygen recombination, safety, thermal runaway, valve-regulated lead-acid (VRLA) batteries

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Introduction

[This introduction is not a part of IEEE Std 1189-1996, IEEE Guide for Selection of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications.]

Valve-regulated lead-acid (VRLA) batteries are playing an ever-increasing role in control and power systems, for stationary reserve use in electric utilities, telecommunications, and uninterruptible power systems. In many cases, VRLA batteries are being substituted for vented lead-acid batteries. Their use is also expanding into many other applications where their unique characteristics appear attractive. Both gelled electrolyte and absorbed electrolyte VRLA designs, covering a range of sizes and capacities, are now available for use in many traditional and nontraditional battery applications. This guide fulfills the need within the industry to provide common understanding on VRLA cells and is applicable to all installations and battery sizes.

At the time this guide was completed, the VRLA Battery Selection Working Group had the following membership:

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