Choosing the Right Power Source for Floor Care Equipment

For commercial and industrial facility maintenance, floor scrubbers are essential for keeping areas clean and safe. While they're often used for several consecutive hours during scheduled cleaning times, they also need to be available for emergency clean-ups or intermittent use in facilities that never close. Consistent and reliable operation is crucial when keeping up with unexpected facility needs and meeting contractual obligations.

To meet floor care equipment power demands, the battery must have the power to run hard for longer periods and be ready at a moment's notice throughout the day – sometimes with little charging time between uses.

The challenge is determining which power source best meets the needs of a facility's floor care regimen. The three most common battery options for floor care equipment are flooded lead acid (or wet) batteries, traditional absorbed glass mat (AGM) batteries, and lithium-ion batteries. Thin plate pure lead (TPPL) batteries are a fourth option. Based on proven military technology for mission-critical applications, TPPL batteries offer similar advantages to lithium-ion, including longer life expectancy, convenient opportunity charging, along with a sealed design that eliminates watering and potential spills.

Each option has its advantages and disadvantages. Here are some considerations when choosing the right battery for your floor care equipment:

Run Times

Does your floor scrubber run for hours at a time without breaks or is it used intermittently? For longer run times— which is especially common in facilities that close at the end of the day and have long, dedicated cleaning periods— batteries with higher energy density are the best choice. TPPL batteries have more lead plates inside the same-sized battery, so they can hold up to 25% more energy than wet or AGM batteries. For more intermittent use, TPPL batteries offer a superior storage life that is up to 4 times longer than AGM or wet batteries. For example, schools and universities that use wet or AGM batteries to power their floor care equipment often return from summer break and discover that their floor care batteries are dead. With TPPL batteries, their floor care equipment will be ready to run even after sitting idle for extended periods.

Recharge Time

For applications in which there is little recharge time between moderate or heavy use periods, faster charging speed is a key consideration. Wet batteries and AGM batteries have a 20% charge rate (percent charged per hour) versus the 70% charge rate of TPPL. To put that into perspective, a TPPL battery can be fully charged and ready to use for a second shift in 90 minutes, while a full charge for a wet battery or AGM battery can take up to 8 or more hours.

Cycle Life

For applications in which the floor scrubber is used heavily, TPPL batteries offer opportunity charging throughout the day without degrading the battery's capacity. Both wet batteries and AGM batteries suffer damage over time when they are opportunity charged, shortening the overall life of the battery. For example, a wet battery or AGM battery rated for 700 cycles may drop down to a life of 300 cycles if it is repeatedly plugged into the charger without a full discharge. A Maryland-based building services contractor was frustrated with the short life cycle of its wet batteries. After switching to TPPL batteries, they were able to extend the lifecycle of their batteries by 300%.

Maintenance

Are there maintenance staff available to water your wet batteries every week? While TPPL batteries, AGM batteries, and lithium-ion batteries feature no maintenance, wet batteries require weekly watering to replace the water that is normally lost during the charge process. The plates of a wet battery that are under-watered will be damaged due to exposure to oxygen. Over-watering a wet battery can cause acid to spill onto your equipment and the floors you're trying to keep clean. If you're a service contractor, these acid spills could result in thousands of dollars in repair costs and potentially the loss of a customer.

Operating Costs

Energy and water use, labor expenses, as well as replacement costs all contribute to the operating cost of a battery. Due to its higher water and energy use, maintenance time requirements, and shorter life cycle, wet batteries have the highest operating costs. AGM batteries do not require watering, but their service life is often shorter than other battery technologies. A Michigan-based university switched from AGM batteries to TPPL batteries for its floor care machines and saw significant cost savings.

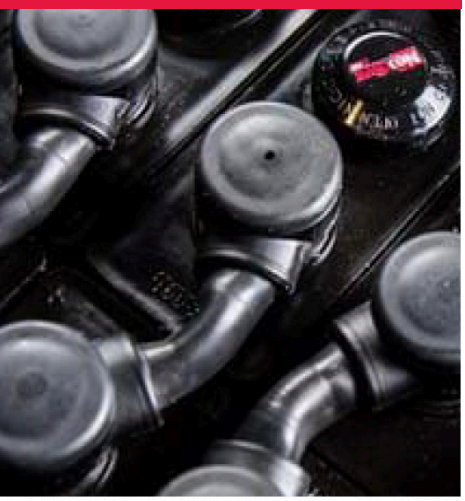
TPPL batteries and lithium-ion batteries do not require watering but also have better energy efficiency, no maintenance, and higher cycle life, giving them the lowest operating cost. However, replacement costs for lithium-ion batteries are by far the highest of the four battery types.

Safety

One of the biggest safety concerns regarding wet batteries is the potential for acid spills, which expose employees to danger and risk severe damage to floors. When not designed as a holistic system and created piecemeal from low-cost vendors, lithium-ion batteries pose their own safety risks for extreme overheating - potentially damaging equipment and facilities. This is why caution should be exercised when considering the use of lithium-ion in floor care equipment. Unlike wet batteries, TPPL batteries and AGM batteries are completely sealed, eliminating the risk of acid leaks or spills. AGM and TPPL batteries are not prone to overheating events such as low-cost, poorly-engineered lithium-ion batteries from lower-quality vendors.

Environmental Sustainability

The three biggest areas of a battery's environmental impact are in water use, energy efficiency during charging and recyclability. Wet batteries require watering while AGM batteries, TPPL batteries, and lithium-ion batteries do not. Additionally, TPPL batteries and lithium-ion batteries charge more efficiently than wet batteries and AGM batteries. At end of life, wet batteries, AGM batteries and TPPL batteries are up to 98% recyclable, while recycling processes for lithium-ion batteries are still in their developmental stages.



The NexSys® TPPL Advantage

NexSys® TPPL batteries are the optimal choice for floor scrubbers. For heavy usage applications, NexSys® TPPL batteries offer highly-efficient opportunity charging that doesn't degrade the battery's capacity or pose the overheating risks of lithium-ion. For intermittent use, NexSys® TPPL batteries offer a superior storage life that is up to 4 times longer than AGM and wet batteries. NexSys® TPPL batteries have better energy efficiency, longer life, and require no maintenance, giving them the lowest operating cost among common floor care battery technologies. Their sealed design eliminates watering and the potential for damaging spills on carpets, tiles and other floor surfaces. To learn more about NexSys® TPPL batteries and if they would work for your floor care equipment, please reach out to us for more information.

GET STARTED

EnerSys®

WORLD HEADQUARTERS
2366 Bernville Road
Reading, PA 19605 USA
+1 610-208-1991 / +1 800-538-3627

ENERSYS EMEA
EH Europe GmbH
Baarerstrasse 18
6300 Zug Switzerland / +41 44 215 74 10

ENERSYS ASIA
No. 85, Tuas Avenue 1
Singapore 639518
+65 6558 7333