



## EnerSys® NexSys® PURE batteries on track to exceed lifecycle expectations and power floor cleaner fleet for 3+ years!

### To clean or not to clean with NexSys® PURE batteries?

In 2016, a Maryland-based building services contractor won a floor cleaning contract for a grocery store chain with 33 stores in upstate New York. To help control costs, the contractor was considering NexSys® PURE batteries for use in the floor cleaning equipment fleet that would do the work.

NexSys PURE batteries feature proprietary Thin Plate Pure Lead (TPPL) technology, which makes them energy-dense, virtually maintenance-free and ideal for opportunity and fast charging. They also deliver significantly longer run times and lifecycles compared to flooded batteries. To get a sense of just how much longer, plus how much the operation might expect to save on battery costs, the contractor worked closely with EnerSys® to devise a unique beta test.

### Testing TPPL technology at work

First, the contractor identified two retail locations that were similar in size and operating hours to the 33 grocery stores. Workers ran the TPPL-powered floor equipment in both stores every night for six weeks, capturing a range of operating and usage data in the process.

At the end of the trial, a data analysis predicted that using and opportunity charging NexSys PURE batteries would help the contractor control operating costs, in part, by eliminating the need for watering. But the data also showed that the batteries would easily reach their warranted three-year lifecycle.

### The promise of “fixed” battery costs

For the contractor a predictable lifecycle was key, as battery life in floor cleaning applications is usually a huge operating cost variable – flooded lead acid batteries, depending on maintenance practices, can last as little as nine months. If the NexSys PURE batteries could actually operate virtually maintenance-free for three years, then the contractor could “fix” battery costs for the entire contract – all without the risk of acid leakage or the unpleasant odors associated with the gassing of flooded batteries.

Convinced by the beta test, the contractor implemented the NexSys PURE batteries and charging systems and began using them throughout the 33 grocery stores in late May 2016.

### Checking battery life after two years

When used properly as part of an opportunity charging routine, NexSys PURE batteries are expected to deliver 1200 cycles. “Properly” refers mainly to making sure that each battery is opportunity charged once a day, and ideally, recharged only when the Depth of Discharge (DOD) is at 60% of the battery’s rated Ampere Hour (AH) capacity.

To give the contractor an idea about how crews are operating the batteries, plus overall battery condition, EnerSys provided “cycling” reports on each unit in the 33 stores approximately every six months. As the NexSys PURE batteries hit their two-year installation date, the cycling data was clear: every battery in the fleet was on track to exceed its estimated three-year lifecycle – even those in the busiest, most demanding store locations.

### Average Cycle Life



Flooded Batteries



Absorbed Glass Mat (AGM) Batteries



NexSys® PURE Batteries

\*1200 cycles (at 60% DOD) for 38, 62 and 90 Ah models

# NexSys® PURE Battery Activity: 2016-2018



To get a sense of how the NexSys® PURE batteries have fared fleetwide so far, consider the battery cycling data highlighted in the chart – these four locations represent some of the lightest and heaviest usage of the 33 NexSys PURE battery installations.

### Heavier usage: Store 1 and Store 2

Even in the busiest locations, the NexSys PURE batteries still have more than 40% of their lifecycle left. Each battery is projected to exceed the 3-year cleaning contract with plenty of power to spare.

### Lighter usage: Store 3 and Store 4

Stores 3 and 4 are locations with less intensive cleaning schedules – “plug-ins,” or opportunity charges, average one and a half per week. These NexSys PURE batteries are on track to beat their warranted lifecycle by several years.

## Thin Plate Pure Lead (TPPL) Design

### Robust connections

Cell connectors are casted and bonded to the plates to resist vibration.

### Pure lead plates

Pure lead plates are extremely thin, so more of them fit into the battery. More plates mean more power.

### Compressed AGM separators

Absorbed Glass Mat (AGM) design prevents spills and delivers extreme vibration resistance.



## Features and Benefits



No watering, battery cleaning or long equalize charges



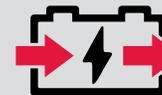
Fast charge in less than 2 hours; plug-in during breaks



Cell connectors are cast and bonded to the plates



Optimized cycling performance and high energy throughput



Very low internal resistance means more power when you need it most

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Case History Floor Care September 2020

