



SURFACE VEHICLE STANDARD

J2185™

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Life Test for Heavy-Duty Storage Batteries (Lead Acid Type only)

RATIONALE

This standard is being revised to correct references to other SAE documents.

1. SCOPE

This SAE Standard applies to lead-acid 12 V heavy-duty storage batteries as described in SAE J537 and SAE J930 for uses in starting, lighting and ignition (SLI) applications on motor vehicles and/or off-road machines. These applications have some of the following characteristics:

- a. High levels of power are required to start the vehicle's internal combustion engine. The need to supply this power limits the maximum depth of discharge to a fraction of the total capacity of the battery. The battery must be maintained at a charge level sufficient to perform this primary function by vehicle's voltage-regulated charging system.
- b. The vehicle's engine powers a voltage regulated charging system that limits the charging voltage when spinning at sufficient speed and when total loads do not exceed its output limits.
- c. The battery is subject to deeper discharging than a typical automotive application as a result of the following conditions:
 - High daily hours of use
 - High numbers of starts per day
 - Electrical loads often exceeding charging system output (at idle)

Batteries will be classified into two types for this life test. Type 1 applies to BCI group sizes typically with reserve capacity (RC) rating of 250 minutes or less. Type 2 applies to larger batteries typically with reserve capacity greater than 250 minutes.

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2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA). www.sae.org.

SAE J537 Storage Batteries

SAE J930 Storage Batteries for Off-Road Self-Propelled Work Machines

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA). www.sae.org.

SAE J240 Life Test for Automotive Storage Batteries

SAE J2801 Comprehensive Life Test for 12 V Automotive Storage Batteries

2.2.2 BCI Publications

Available from Battery Council International, 330 North Wabash Avenue, Suite 2000, Chicago, IL 60611, Tel: 312-644-6610, www.batterycouncil.org.

BCI Battery Technical Manual

3. DEFINITIONS

3.1 CCA

Cold Cranking Amperes at -18 °C as defined in SAE J537.

3.2 RC

Reserve Capacity in minutes at 27 °C as defined in SAE J537.

3.3 FLOODED LEAD-ACID BATTERY

A common type of lead-acid battery in which cell element is immersed in an excess amount of free-flowing sulfuric acid electrolyte.

3.4 VALVE-REGULATED LEAD-ACID (VRLA) BATTERY

A class of lead-acid batteries that uses a re-sealable one-way check valve to control the gassing pressure inside the battery. These batteries are characterized by the ability to operate under the oxygen recombination cycle. There are two main subclasses of the VRLA battery, namely, Absorptive Glass Mat (AGM) Lead-Acid Battery, and Gel Lead-Acid Battery.