الهيئة السعودية للمواصفات والمقاييس والجودة

Saudi Standards, Metrology and Quality Org (SASO)

SASO/DS/IEC 60095-1:2019/AMD1:2023

بطاريات الرصاص الحمضية لبدء التشغيل – الجزء 1: المتطلبات العامة وطرائق الاختبار

Lead-acid starter batteries – part1: General requirements and methods of test

ICS: 29.220.20

THIS DOCUMENT IS A DRAFT AMENDMENT TO SAUDI STANDARD CIRCULATED FOR COMMENT. IT IS, THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED UNTIL APPROVED BY THE BOARD OF DIRECTORS.

Foreword

Saudi Standards, Metrology and Quality Organization (SASO) has adopted Standard No. (IEC 60095-1) "Lead-acid starter batteries – part1: General requirements and methods of test " issued by (IEC) in English. This standard has been approved as a Saudi Standard with national modifications.

Saudi Standards, Metrology and Quality Organization (SASO) has approved the Amendment of Standard No.(SASO/DS/IEC 60095-1:2019/AMD1:2023), (Lead-acid starter batteries – part1: General requirements and methods of test). This amendment has been approved as a complementary part of the Saudi Standard No (SASO IEC 60095-1:2019). Standard has been varied as indicated to take account of Kingdom of Saudi Arabia conditions.

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6. Charging modes and functions

6.1.5 Production date

Replace:

Date code should be placed in English production on the top surface of the battery visibly and in a non-removable and put code in the following format:



By:

Date code should be placed in English production on the top surface of the battery visibly and permanently and put code in the following format:

xx/yy

9.7 Water consumption test

Replace:

This test applies only to vented batteries.
The battery, after being charged according to 8.2, shall be cleaned, dried and weighed to an accuracy of ± 0,05 % (W1).
The battery shall be placed in a water bath maintained at a temperature of 40 °C ± 2 °C according to the provisions of 8.3.2. The battery shall be charged at a constant voltage of 14,40 V ± 0,05 V (measured across the battery terminals) for a period of 500 h. Immediately after this overcharge period, the battery shall be weighed under the same conditions as initially, with the same scales (W2).The ratio (W1-W2)/*C*20 shall be calculated and compared against the requirements listed in Table 6.

NOTE It is possible to carry out this test with a different temperature than 40 °C (for example 60 °C); see the correlation formula between temperatures in Annex B.

By:

This test applies only to vented batteries.
The battery, after being charged according to 8.2, shall be cleaned, dried and weighed to an accuracy of ± 0,05 % (W1).The battery shall be placed in a water bath maintained at a temperature of 60 °C ± 2 °C according to the provisions of 8.3.2.
The battery shall be charged at a constant voltage of 14,40 V ± 0,05 V (measured across the battery terminals) for a period of 500 h. Immediately after this overcharge period, the battery shall be weighed under the same conditions as initially, with the same scales (W2).
The ratio (W1-W2)/*C*20 shall be calculated and compared against the requirements listed in Table

10 Requirements

Table 6 – Summary of requirements

Replace:

Functional characteristics	See paragraph	Requirements	Comments
20 h capacity	9.1	$C_e \geq C_{20}$	For batteries rated in Ah
Reserve capacity	9.2	$RC_e \geq RC_n$	For batteries rated in reserve capacity
Cranking performance test −18 °C	9.3.1	Option 1 (for batteries rated in Ah) $U_{10\ s} \geq 7{,}50$ V $t_{6\ V} \geq 90$ s Option 2 (for batteries rated in reserve capacity) $U_{30\ s} \geq 7{,}20$ V	
Cranking performance test −29 °C	9.3.2	$U_{30\ s} \geq 7{,}20$ V	Optional
Charge acceptance	9.4	$I_{ca} \geq 2I_0$	
Charge retention Normal batteries (N) and Low water loss batteries (L)	9.5	$U_{30\ s} \geq 8{,}0$ V	
Charge retention Very low water loss batteries (VL)	9.5	$U_{30\ s} \geq 8{,}5$ V	
Corrosion test	9.6.1.1	Number of units ≥ 4	
Endurance in cycle test	9.6.1.2	Flooded (vented) ≥ 60 cycles VRLA ≥ 250 cycles	
Optional endurance in cycle test	9.6.2	Number of cycles = $34 \times RC_n - 581$	Optional
Water consumption Normal batteries (N)	9.7	No requirement	
Water consumption Low water loss batteries (L)	9.7	Maximum 4 g/Ah	
Water consumption Very low water loss batteries (VL)	9.7	Maximum 1 g/Ah	
Vibration	9.8	$U_{30\ s} \geq 7{,}2$ V	
Electrolyte retention	9.9	No evidence of liquid on the vent plugs (or from the single point vent outlet)	
Cranking performance after activation	9.10	$U_{30\ s} \geq 7{,}2$ V	
For both C_e or RC_e and the cranking performance, the specified values shall be met in at least one of the three relevant discharges above (see 9.1, 9.2, and 9.3).			

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Functional characteristics	See paragraph	Requirements	Comments
20 h capacity	9.1	$C_e \geq C_{20}$	For batteries rated in Ah
Reserve capacity	9.2	$RC_e \geq RC_n$	For batteries rated in reserve capacity
Cranking performance test −18 °C	9.3.1	Option 1 (for batteries rated in Ah) $U_{10\ s} \geq 7{,}50$ V $t_{6\ V} \geq 90$ s Option 2 (for batteries rated in reserve capacity) $U_{30\ s} \geq 7{,}20$ V	
Cranking performance test −29 °C	9.3.2	$U_{30\ s} \geq 7{,}20$ V	Optional
Charge acceptance	9.4	$I_{ca} \geq 2I_0$	
Charge retention Normal batteries (N) and Low water loss batteries (L)	9.5	$U_{30\ s} \geq 8{,}0$ V	
Charge retention Very low water loss batteries (VL)	9.5	$U_{30\ s} \geq 8{,}5$ V	
Corrosion test	9.6.1.1	Number of units ≥ 4	
Endurance in cycle test	9.6.1.2	Flooded (vented) ≥ 60 cycles VRLA ≥ 250 cycles	
Optional endurance in cycle test	9.6.2	Number of cycles = $34 \times RC_n - 581$	Optional
Water consumption Normal batteries (N)	9.7	No requirement	
Water consumption Low water loss batteries (L)	9.7	Maximum 16 g/Ah	
Water consumption Very low water loss batteries (VL)	9.7	Maximum 4 g/Ah	
Vibration	9.8	$U_{30\ s} \geq 7{,}2$ V	
Electrolyte retention	9.9	No evidence of liquid on the vent plugs (or from the single point vent outlet)	
Cranking performance after activation	9.10	$U_{30\ s} \geq 7{,}2$ V	
For both C_e or RC_e and the cranking performance, the specified values shall be met in at least one of the three relevant discharges above (see 9.1, 9.2, and 9.3).			