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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 22473.1-2021

**Batteries used for energy storage - Part 1: Photovoltaic off-grid
application technical conditions**

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Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms, Definitions, Symbols and Abbreviations

foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents"

drafted:

This document is part 1 of GB/T 22473 "Storage batteries": GB/T 22473 has published the following parts:

--- Part 1: Technical conditions for photovoltaic off-grid applications:

This document replaces GB/T 22473-2008 "Lead-acid batteries for energy storage":

Compared with GB/T 22473-2008, except for structural adjustment and

In addition to editorial changes, the main technical changes are as follows:

--- Changed the "scope", the scope of application increased the nickel-hydrogen battery and lithium-ion battery (see Chapter 1);

--- Added the techniques of "battery module", "battery ambient temperature", "photovoltaic off-grid application", "charging limit voltage" and "discharge cut-off voltage"

terms and definitions" (see 3:1:4, 3:1:5, 3:1:6, 3:1:7, 3:1:8);

--- Changed the product model compilation method (see Chapter 4, Chapter 4 of the:2008 edition);

--- Added technical requirements and test methods for product appearance and polarity (see 5:2, 7:1);

--- Added the technical requirements and test methods for "charging efficiency" (see 5:5, 7:4);

--- Added the technical requirements and test methods for "overcharge capability" (see 5:7, 7:6);

--- Added the technical requirements and test methods for "overdischarge capability" (see 5:8, 7:7);

--- Changed the technical requirements and test methods of "low temperature capacity" (see 5:4:5, 7:3:5, 5:2:2, 7:2:2 of the:2008 edition);

--- Delete the technical requirements and test methods of "charging acceptance" (see 5:5 and 7:5 of the:2008 edition);

--- Delete the technical requirements and test methods for "water loss" (see 5:7 and 7:7 of the:2008 edition);

--- Changed the technical requirements and test methods of "cycle durability" (see 5:9, 7:8, 5:8, 7:8 of the:2008 edition);

--- Changed the environmental requirements of the test (see 7:8:2, 7:8:2 of the:2008 edition);

--- Changed the type inspection procedure (see 8:3:2, 8:3:2 of the:2008 edition):

This document refers to IEC 61427-1:2013 "General requirements and test methods for secondary cells and batteries for regenerative energy storage - Part 1:

Photovoltaic Off-Grid Application" was drafted, and the degree of consistency is non-equivalent:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

The country has put forward the climate action goals of carbon peaking and carbon neutrality, and it is necessary to build a clean, low-carbon, safe and efficient energy system and control fossil energy:

The total amount of renewable energy is implemented, and a new power system with new energy such as solar energy and wind energy as the main body is constructed: But wind and solar

With the unstable and discontinuous characteristics of power generation, the configuration of energy storage can fundamentally solve this problem and achieve safe and stable power supply: in the near future

In the future, the application of energy storage in various links and scenarios is bound to increase significantly, and the standard for energy storage batteries should be the first: GB/T 22473 "Storage for energy storage

Battery" specifies the technical requirements and test methods for storage batteries for photovoltaic power generation equipment, and guides the manufacture of storage batteries

more scientifically:

Enterprise technology upgrade, guide users to carry out technology selection, operation and maintenance, etc: The main problems it solves are:

--- specifies the terms, definitions, symbols and abbreviations for storage batteries used in photovoltaic power generation equipment;

---Specifies the model compilation method of batteries for energy storage of photovoltaic power generation equipment;

---Specifies the technical requirements, test conditions and test methods for storage batteries used in photovoltaic power generation equipment;

--- specifies the inspection rules for storage batteries used in photovoltaic power generation equipment;

---Specifies the marking, packaging, transportation and storage of storage batteries for photovoltaic power generation equipment:

GB/T 22473 "Storage Battery" is intended to consist of two parts:

--- Part 1: Technical conditions for photovoltaic off-grid applications: Aims to standardize battery technology for energy storage of off-grid photovoltaic application power generation equipment

condition:

--- Part 2: Technical conditions for photovoltaic grid-connected applications: Aims to standardize storage battery technology for grid-connected photovoltaic application power generation equipment

condition:

This document provides for the storage battery of photovoltaic off-grid application power generation equipment by standardizing the battery technical conditions for photovoltaic off-grid applications:

standardized detection methods:

battery for energy storage

Part 1: Technical conditions for photovoltaic off-grid applications

1 Scope

This document specifies the model compilation method of lead-acid batteries, nickel-metal hydride batteries and lithium-ion batteries for energy storage of photovoltaic off-grid power generation equipment:

law, technical requirements, test conditions, test methods, inspection rules, marking, packaging, transportation and storage:

This document applies to lead-acid batteries, nickel-metal hydride batteries and lithium-ion batteries (hereinafter referred to as "storage batteries") for energy storage of photovoltaic off-grid applications:

"Battery"): The storage battery for wind power generation equipment and other renewable energy off-grid applications is used as a reference:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

Documents, only the version corresponding to the date is used in this document; for undated reference documents, the latest edition (including all amendments) applies to this document:

GB/T 2900:41 Electrotechnical term primary cells and accumulators

GB/T 7169 Model nomenclature method for accumulators and accumulators containing alkaline or other non-acid electrolytes

JB/T 2599-2012 Lead-acid battery name, model preparation and naming method

3 Terms, Definitions, Symbols and Abbreviations

3:1 Terms and Definitions

GB/T 2900:41 and the following terms and definitions apply to this document:

3:1:1

vented lead-acid batteries for energy storage

The battery cover has one or more exhaust devices capable of precipitating gaseous products, a non-in-line structure in which the acid mist is filtered, internal and external

Lead-acid batteries for energy storage with inconsistent pressure:

Note: referred to as vented battery:

3:1:2

Valve-regulated lead-acid batteries for energy storage

A lead-acid battery for energy storage with an exhaust valve that allows gas to escape when the internal pressure of the battery exceeds a predetermined value: