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

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Photovoltaic(PV) modules - Dynamic mechanical load testing

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Table of Contents

Preface	
1 Scope	1
2 Normative reference documents	1
3 Terms and Definitions	1
4 Test device	1
5 Initial measurement	2
6 Program	2
7 Final measurements	3
8 Test report	3
Appendix A (informative) Follow-up test	5

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is equivalent to IEC TS62782.2016 "Cyclic (Dynamic) Mechanical Load Test of Photovoltaic Modules", and the file type is determined by IEC

The technical specifications are adjusted to my country's national standards.

This document has been made with the following minimal editorial changes.

---In order to coordinate with the existing standards, the name of the standard is changed to "Dynamic Mechanical Load Test of Photovoltaic Modules";

---Chapter 6 d) adds a note that "the number of cycles and the maximum pressure can be determined by negotiation between the supply and demand parties based on special needs";

---In order to coordinate with existing standards and my country's actual situation, the expression 3) in Chapter 8 l) is modified to "at 500V or the maximum system

Conduct an insulation test under the system voltage (take the larger value), and the product of the measured insulation resistance value and module area is less than 40Mohm.m²".

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies methods for dynamic mechanical load testing of photovoltaic modules. The photovoltaic modules are placed on the designed support points and applied vertically to

The uniform load on the surface of the photovoltaic module cycles alternately in forward and reverse directions. This test is used to evaluate components such as solar cells, interconnect strips and/or electrical connections

Are the internal components susceptible to breakage or are the edge seals subject to loss due to mechanical stress during installation and operation of the PV module?

effect. This test is performed at any temperature within the normal operating temperature range of the component. Since the component temperature during load application affects the test results

Therefore, it is crucial to keep the component temperature constant during the test.

This document is applicable to the testing of rigid components and is not applicable to flexible components, but can be used for flexible components with rigid supports.

This document is an independent technical specification, but is often used in conjunction with other standards. Normally no functional effects will occur when this test is performed alone.

However, after this test is performed, other tests such as thermal cycle tests and moisture-freezing tests will cause power losses. This power loss

Failure results from damage to components caused by dynamic mechanical loads, not just thermal cycle testing and moisture-freezing cycle testing. For example, transportation testing

The procedure (IEC 62759) requires 50 thermal cycle tests and 10 moisture-freeze cycle tests after the dynamic mechanical load test.

2 Normative reference documents

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

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

Note. GB/T 27025-2019 General requirements for testing and calibration laboratory

capabilities (ISO /IEC 17025.2005, IDT).

3 Terms and definitions

The terms and definitions defined in IEC TS61836 apply to this document.

4 Test device

Test equipment included.

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