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

GB/T 12747.2-2017

Replacing GB/T 12747.2-2004

**Shunt power capacitors of the self-healing type for a.c. systems
having a rated voltage up to and including 1 000 V -- Part 2:
Ageing test, self-healing test and destruction test**

(English Translation)

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Foreword

GB/T 12747 "1000V and below nominal voltage AC power system with self-healing shunt capacitor" is divided into two parts.

--- Part 1. General guidelines for performance, testing and quota safety installation and operation guidelines;

--- Part 2. Aging test, self-healing test and destruction test.

This section GB/T 12747 Part 2.

This section according to GB/T 1.1-2009 given rules.

This Part replaces GB/T 12747.2-2004 "self-healing shunt capacitors for AC power systems rated voltage 1kV and below Part 2. Aging test, self-healing test and failure test ", compared with GB/T 12747.2-2004 main technical changes are as follows.

--- Updated normative references;

- Before the aging test discharge cycle clear at room temperature (see 17.1.1);
- Aging test in the test program adds "taking into account the deviation of the supply voltage, the test voltage should be the entire duration of the test Average "requirement [see 17.2a)];
- Increased self-healing test DC voltage can be used for testing (see Chapter 18);
- Self-healing test will be "voltage reached 3.5UN, the breakdown occurred less than 5 times, you can extend the test time until 5 times hit Wear so far. "To" When the voltage reaches the above voltage limit and lasted 10s, if the number of self-healing is still less than 5 times, but as long as there is at least one self-healing, the trial should be ended. "(See chapter 18, chapter 18 of the 2004 edition);
- Revised self-healing test acceptance conditions will be "before and after the test should be measured capacitance, the value shall not be significantly changed" to "test the capacitance and tan delta should be measured before and after "and the formula for checking tan delta is given (see Chapter 18, Chapter 18 of the 2004 edition).
- Will destroy the test procedure When the switch H is placed in position 3, the original standard "to maintain 3s ~ 5s" is amended to "at least keep 3s "while adding another test option [see 19.1c), 2004 edition 19.1c)].

This section uses the translation method identical with the international standard IEC 60831-2:2014 "rated voltage 1000V and below AC power system Self - healing shunt capacitors - Part 2. Aging test, self - healing test and destruction test "(in English).

This part is proposed by China Electrical Equipment Industry Association.

This part of the National Power Capacitor Standardization Technical Committee (SAC/TC45) centralized.

This part of the drafting unit. Xi'an High Voltage Electrical Apparatus Research Institute Co., Ltd., Zhejiang Jiushe Electric Co., Ltd., Ningbo Xin Rong Electric Technology Co., Ltd., Hefei Warwick Automation Co., Ltd., Xi'an West Power Capacitor Co., Ltd., Zhejiang Wald Power Electronics Co., Ltd.

Division, Xiamen Farah Electronics Co., Ltd., referring to the Group Co., Ltd. State Grid Anhui Electric Power Company Electric Power Research Institute, Shenzhen Sanhe Power Technology Co., Ltd., Zibo Leibo Power Capacitor Co., Ltd., Anhui Tongfeng Electronics Co., Ltd. capacitor company, Delixi Gas Co., Ltd., New Northeast Electric Group Power Capacitor Co., Ltd., Shanghai Yong Jin Electric Group Co., Ltd., Nantong Pan-electronic technology have Co., Ltd., Jiangsu Modern Power Technology Co., Ltd., Shanghai Haoyue Electric Co., Ltd., Ningguo Yuhua Electric Co., Ltd., Zhejiang Weiss Kang Electric Co., Ltd., Xi'an Huachuo Power Capacitor Co., Ltd.

1 Scope

This section GB/T 12747 applies to capacitors in line with GB/T 12747.1-2017, and provides for the aging test of these capacitors Inspection, self-healing and destructive testing requirements.

Note The numbers in this part of the chapter and Article GB/T 12747.1-2017 in the corresponding.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Self - healing shunt capacitors for ac power systems of nominal voltage 1000V and below - Part 1. GB/T 12747.1-2017.

General Rules for Performance, Testing and Quorum Requirements for Installation and Operation (IEC 60831-1-2014, IDT)

17.1.1 Overview

Aging Tests During the first step [17.2a)] and the third step [17.2c)], the temperature of the cell shell shall be the average of the cells within 24h the maximum temperature (see GB/T 12747.1-2017, Table 1) plus the same unit measured at the end of the thermal stability test case temperature and cold but the difference between the air temperature. The second step of the aging test [17.2b)] should be carried out at room temperature.

Both test methods described below ensure that the temperature of the capacitor case remains constant during the test.

Both methods are considered equivalent.

Unsealed units should be tested in forced circulation air.

17.1.2 Test in forced circulation of air

The capacitor unit is placed in a closed box with hot air circulation, air circulation speed of the box should be able to make the temperature at each point in the closed box Difference does not exceed ± 2 °C. Automatic adjustment of the temperature of the closed box with temperature-sensitive components should be placed on the surface of the capacitor case from the bottom up a quarter of the total Three places.

Capacitors should be placed upright with their terminals upright.

When multiple capacitors are tested together, there should be sufficient spacing between the capacitors to provide sufficient uniformity of temperature.

After placing the capacitor in the unheated enclosure, adjust the thermostat to the temperature specified in 17.1.1.

The enclosure is then heated to a steady state with the capacitor not energized. When the enclosure temperature of the capacitor reaches the specified temperature with a deviation of $\pm 2^{\circ}\text{C}$, it is considered that the closed box has reached thermal stability.