ICS 49.060
CCS V 40

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 35856-2018

Methods of insulation resistance test and resistant high voltage test for aircraft electrical equipment

Issued on: February 6, 2018 **Implemented on: February 6, 2018**

Issued by: State Administration for Market Regulation, China National Standardization Administration

Table of Contents

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method equivalent to using ISO 2678. 1985 "aircraft equipment environmental test insulation resistance and high voltage test."

The Chinese documents that have a consistent correspondence with the normatively cited international documents in this standard are as follows.

---HB6167 (All parts) Civil aircraft aircraft airborne equipment environmental conditions and test methods [ISO 7137 (all parts)].

This standard has made the following editorial changes.

--- Modified standard name.

This standard was proposed by China Aviation Industry Corporation.

This standard is under the jurisdiction of the National Aircraft Standardization Technical Committee (SAC/TC435).

This standard was drafted by Shaanxi Aviation Electric Co., Ltd., Northwestern Polytechnical University, Anhui Zhiyi Technology Consulting Co., Ltd., and China Airlines.

Air Integrated Technology Institute, Guiyang Aviation Motor Co., Ltd.

Introduction

0.1 This standard is part of the series of environmental tests for aircraft equipment. See other environmental tests in ISO 7137.

0.2 The safe operation of aircraft electrical equipment requires good insulation quality and withstand voltage capability. The quality and size of the insulator should be adaptable

The voltage and the weather conditions affected, such as temperature, humidity, atmospheric pressure, and surface contamination. Only adopt the correct test method,

Understanding and verifying the physical properties and status of the insulation enables smaller and more secure designs for electrical equipment.

Insulation resistance measurement and withstand voltage test should be regarded as two different tests. Only the high insulation resistance cannot prove that the insulation has no defects. For example,

When arc cracking occurs in the insulating medium, flashover voltage will be generated.

0.2.1 Voltage withstand test purpose

The withstand voltage test is designed to test the insulation ability against the induction of the electric field.

0.2.2 Insulation resistance test purpose

The insulation resistance measurement is to check whether the electrical equipment has enough insulation resistance value to prevent the leakage current exceeding the allowable value from passing through the insulation.

In particular, under the influence of various climatic conditions such as temperature and humidity and surface contamination conditions, the electrical equipment is maintained by measuring the insulation resistance.

Insulation performance.

0.2.3 Leakage Current Test Purpose

Leakage current detection is suitable for devices with semiconductors. The test voltage depends on the rated voltage of the components.

Aircraft electrical equipment insulation resistance and withstand voltage test method

1 Scope

This standard stipulates the insulation resistance test and withstand voltage test requirements for electrical equipment intended for installation and proposes four types of equipment.

Insulation requirements.

This standard applies to the insulation resistance test and withstand voltage test of electrical equipment intended for installation. This standard does not cover the installed fly

Insulation test of equipment on board.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 7137 Aircraft Airborne Equipment Environmental Conditions and Test Methods (Aircraft-Environmentalconditionsandtest

Proceduresforairborneequipment)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Insulation medium meansofinsulation

Gas, liquid, or solid material used for insulation.

3.2

Insulator insulation

The general term for the final product form formed from insulating materials.

3.3

Insulation capacity insulationcapability

The ability to withstand the appropriate level of test voltage.

3.4

Rated voltage ratedvoltage

The voltage value associated with its operating characteristics specified in the marking of electrical equipment.

4.1.1 Test Requirements

The withstand voltage test should be specified in the electrical equipment specification. When the insulation can withstand the test voltage specified in Table 1, the equipment is considered

Has a sufficient insulation capacity. When it is necessary to repeat the withstand voltage test, only 80% of the test voltage specified in Table 1 shall be applied. This regulation

Also applies to equipment that has been used or repaired.