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

GB/T 47621.1-2026

**Air intake filter systems for rotary machinery - Test methods -
Part 1: Static filter elements**

旋转式空气动力设备进气过滤系统 试验方法 第1部分：静态过滤元件
(English Translation)

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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 Part 1 of GB/T 47621 "Test Methods for Inlet Filtration Systems of Rotary Aerodynamic Equipment".

The following sections have been released.

---Part 1: Static Filter Elements;

---Part 2: Moisture Resistance Test.

This document is equivalent to ISO 29461-1:2021 "Rotating aerodynamic equipment - Inlet filtration systems - Test methods - Part 1: Static airflow".

"State-of-the-art filter element".

The following minimal editorial changes have been made to this document.

---Corrected a printing error in the international standard by changing Introduction the air intake filtration system of rotary aerodynamic equipment typically consists of a set of regularly arranged filter elements, which is essential for ensuring the airflow of the rotary aerodynamic equipment.

A crucial auxiliary system for the safe and efficient operation of power equipment. From inland to ocean, from cities to suburbs, the climate is complex and diverse, and the range of pollutant particles varies greatly.

The scope is very wide. If airborne particulate matter is not treated, it can cause damage to equipment, such as erosion, scaling, and corrosion. With...

The increasing precision of gas turbine manufacturing processes, the higher operating temperatures of hot components, and the pursuit of high efficiency, low maintenance, and long service life for components are all factors that need to be addressed.

Advanced rotary aerodynamic equipment has increasingly stringent requirements for air quality. GB/T 47621 aims to establish standards for advanced rotary aerodynamic equipment.

The test method for the air filtration system is proposed to consist of two parts.

---Part 1: Static Filter Elements. The purpose is to establish the testing and classification of filter efficiency, and the relationship between filter resistance and dust holding capacity.

The determination of the system, the method and report for eliminating static electricity used to determine the minimum filtration efficiency.

---Part 2: Moisture Resistance Test. The purpose is to establish a test method for the moisture resistance of filter elements under laboratory conditions.

This method is used to evaluate the performance and performance change trends of filter elements in high humidity and water mist environments.

In this document, the performance of the intake filtration system includes not only dust collection capabilities but also particulate matter filtration efficiency within a certain particle size range.

Rate. In typical outdoor air, ultrafine and fine particles in the 0.01 μm ~1 μm range account for 99% of the count concentration and surface pollution.

Over 90% of the fouling occurs in gas turbines, with the majority of the mass coming from large particles (above 1 μm). When assessing fouling conditions in gas turbines, both ultrafine particles and large particles must be considered.

In addition to fine particulate matter, larger particulate matter should also be considered.

Rotary aerodynamic equipment intake filtration system Test Methods Part 1: Static Filter Elements

1 Scope

This document specifies the intake air passage for rotary aerodynamic equipment (such as stationary gas turbines, compressors, and some stationary internal combustion engines).

Test methods for the static performance of particulate air filters in filtration systems. The efficiency of most penetrating particle size (MPPS) should reach 85% or higher.

Air filters [sub-HEPA and HEPA filters] are tested according to ISO 29463 (all parts); those below this standard...

The filter is tested according to ISO 16890 (all parts). This document applies ISO 16890 (all parts) and ISO 29463.

The test methods in (all parts) are extended to operate within an airflow range of 0.24 m³/s (850 m³/h) to 2.36 m³/s (8500 m³/h).

Air filters.

Static intake filtration systems typically employ a multi-stage design, including coarse, medium/high-efficiency, and optional sub-HEPA or HEPA filter elements, to...

Protect mechanical equipment. This document contains methods for testing the performance of individual filter elements, but does not cover testing of the entire installed system.

Performance testing methods should be used unless the tested component meets the test requirements. Alternatively, the methods specified in ISO 16890-1 can be used.

Calculate the cumulative filtration efficiency of medium/high-efficiency filters within a multi-stage system.

This document applies to static (interception) filter elements, but may also apply to other filter types or filtration systems where appropriate, such as...

The initial efficiency of a cleanable filter with surface dust holding capacity.

The performance results obtained in this document cannot be used to quantitatively predict the filtration efficiency and service life of filter elements in actual use.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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

This document.

equipment)

3 Terms and Definitions

The terms and definitions defined in ISO 29464 and the following terms and definitions apply to this document.

Sub-high efficiency air filter Filters whose performance meets the requirements of ISO T10 to ISO T12 filtration grades as specified in this document.

Note: EPA filters cannot be leak tested.