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

GB/T 46719.2-2026

**Aerospace - Hydraulic filter elements test methods - Part 2:
Conditioning**

航空航天 液压滤芯试验方法 第2部分：调节作用

(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 2 of GB/T 46719 "Test Methods for Aerospace Hydraulic Filter Elements". GB/T 46719 has been published as follows.

Part 2.

---Part 2: Regulatory Role;

---Part 4: Validation of Crushing/Rupture Pressure Rating;

---Part 6: Cleanliness Levels this document is modified to adopt ISO 14085-2:2015 "Aerospace series hydraulic filter elements - Test methods - Part 2: Regulation action".

This document has undergone significant structural adjustments compared to ISO 14085-2:2015. A table comparing the structural numbering of the two documents can be found here.

Appendix A.

This document differs significantly from ISO 14085-2:2015. The relevant clauses are indicated in vertical margins.

Single lines (|) are indicated. A summary of these technical differences and their causes can be found in Appendix B.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Test Methods for Aerospace Hydraulic Filter Elements - Part 2: Regulation Effect";

---Added terminology sources for version 3.6;

---Added footnotes to Table 1;

---The cold start test schematic diagram and application instructions for some components in the test circuit in Appendix C (informative) have been revised, and some incomplete instructions have been deleted.

Applicable components and their application instructions;

---The list of references has been changed.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Aircraft Standardization Technical Committee (SAC/TC435).

Introduction

GB/T 46719 aims to provide a unified and consistent procedure for performance testing of aerospace hydraulic filter elements, and is proposed to consist of six parts.

---Part 1: Test Sequence. The purpose is to specify the test sequence and provide guidelines for acceptance criteria.

---Part 2: Regulation. This section describes the filter element's thermal conditions and cold start test procedure.

---Part 3: Filtration Efficiency and Retention Capacity. This section describes the test procedures for the filtration efficiency and retention capacity of filter cartridges.

---Part 4: Crushing/Rupture Pressure Rating Validation. This section describes the crushing/rupture pressure test procedure for filter elements.

---Part 5: Resistance to Flow Fatigue. The purpose is to describe the test procedures for the filter element's resistance to flow fatigue.

---Part 6: Cleanliness Class. This section describes the test procedures for the initial cleanliness of the filter element.

In aerospace hydraulic fluid power systems, power is transmitted and controlled through pressurized fluid. This fluid serves as both a lubricant and a...

It is the power transmission medium. The presence of solid contaminant particles in the liquid can interfere with the lubrication ability of the hydraulic oil and lead to wear and failure of components.

The degree of contamination in the fluid directly affects the system's performance, reliability, and safety, and needs to be controlled within the system's permissible level.

Filters typically consist of a filter element enclosed in a housing, which controls the contamination level of oil by removing solid contaminant particles. The filter element is...

A porous element that performs the actual filtration process. The assembly consisting of the filter element and the housing is called a filter.

The filter element is designed to withstand a range of thermal stresses, such as extreme low and high temperature conditions, as well as system requirements at low temperatures (cold start).

The viscosity of the working medium increases significantly as it passes through the filter element. Thermal stress tests verify the chemical and thermal stability of the filter element. Cold start tests verify its performance without structural damage.

Under the premise of performance degradation, the stability of the filter element under high pressure differential and potential weaknesses at low temperatures, as well as whether there are subsequent structural and structural improvements to the filter element, are all factors to consider.

Performance degradation.

This document provides a procedure for verifying whether a filter element can withstand typical thermal stress conditions.

Aerospace hydraulic filter element test methods Part 2: Regulation

1 Scope

This document specifies the test equipment and materials, accuracy of measuring instruments and test conditions for performance testing of aerospace hydraulic filter elements.

The required information includes thermal condition tests, cold start tests, reports, and labeling instructions.

This document applies to performance testing of aerospace hydraulic filter elements under typical thermal stress conditions.

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.

GB/T 786.1 Graphical symbols and circuit diagrams for fluid transmission systems and components - Part 1: Graphical symbols (GB/T 786.1-2021, ISO 1219-1:2012, IDT) GB/T 14041.1 Hydraulic filter elements - Part 1: Verification of structural integrity and determination of initial bubble point (GB/T 14041.1-2007, ISO 2942:2004, IDT) GB/T 17446 Glossary of Fluid Transmission Systems and Components (GB/T 17446-2024, ISO 5598:2020, MOD) GB/T 17486 Evaluation of pressure drop and flow characteristics of hydraulic filters (GB/T 17486-2006, ISO 3968:2001, IDT)

3 Terms and Definitions

The terms and definitions defined in GB/T 17446 and the following terms and definitions apply to this document.

Cold Soak

The filter element is immersed in a static liquid at the system's expected lowest temperature for an extended period of time.

cold start

The rapid passage of high-viscosity liquid at low temperature through the filter element