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Hydraulic filter element test methods — Thermal conditioning and cold start-up simulation

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Hydraulic filter element test methods — Thermal conditioning and cold start-up simulation

*Méthodes d'essai des éléments filtrants hydrauliques —
Conditionnement thermique et simulation de démarrage à froid*



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Foreword

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The committee responsible for this document is ISO/TC 131, *Fluid power systems*, Subcommittee SC 6, *Contamination control*.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within a closed circuit. Filter elements maintain fluid cleanliness by removing insoluble contaminants.

Filter elements, particularly those intended for mobile hydraulic applications, are designed to withstand a range of thermal stresses, such as low and high temperature extremes, and system demands at low temperature (cold starts) whereby hydraulic fluid passes through the element under test at a greatly increased viscosity. These cold starts test the ability of the filter element to withstand the high differential pressures without subsequent loss of integrity or performance.

Stresses due to cold starts can be encountered within the lifetime of a filter element fitted in a mobile hydraulic system. It is therefore necessary to check that, having been subjected to such conditions, the filter element shall continue to provide adequate filtration while also maintaining structural integrity.

This International Standard provides a procedure by which to introduce stresses due to cold start and to condition a filter element prior to any subsequent performance qualification testing, such as multi-pass, collapse, flow fatigue, etc. This enables the purchaser of the filter element to be secure in the knowledge that the product can withstand cold starts and still maintain performance as intended.

