SLOVENSKI STANDARD
SIST EN ISO 29461-2:2022

01-november-2022

Zračni filtrski sistemi rotacijskih strojev - Preskusne metode - 2. del: Preskus vzdržljivosti filtrskih elementov v okolju z meglo in sparino (ISO 29461-2:2022)

Air intake filter systems for rotary machinery - Test methods - Part 2: Filter element endurance test in fog and mist environments (ISO 29461-2:2022)

Ansaugfiltersysteme von Rotationsmaschinen - Prüfverfahren - Teil 2: Dauertest für Filterelemente in Nebel- und Nebelumgebungen (ISO 29461-2:2022)

Systèmes de filtration d'air d'admission pour machines tournantes - Méthodes d'essai - Partie 2: Essai d'endurance d'élément filtrant en brouillard et environnement brumeux (ISO 29461-2:2022)

Ta slovenski standard je istoveten z: **EN ISO 29461-2:2022**

ICS:

29.160.99	Drugi standardi v zvezi z rotacijskimi stroji	Other standards related to rotating machinery

SIST EN ISO 29461-2:2022 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 29461-2

September 2022

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English Version

Air intake filter systems for rotary machinery - Test methods - Part 2: Filter element endurance test in fog and mist environments (ISO 29461-2:2022)

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This European Standard was approved by CEN on 24 June 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 29461-2:2022) has been prepared by Technical Committee ISO/TC 142 "Cleaning equipment for air and other gases" in collaboration with Technical Committee CEN/TC 195 “Cleaning equipment for air and other gases” the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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Endorsement notice

The text of ISO 29461-2:2022 has been approved by CEN as EN ISO 29461-2:2022 without any modification.

INTERNATIONAL STANDARD

ISO 29461-2

First edition
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Air intake filter systems for rotary machinery — Test methods —

Part 2: Filter element endurance test in fog and mist environments

Systèmes de filtration d'air d'admission pour machines tournantes — Méthodes d'essai —

Partie 2: Essai d'endurance d'élément filtrant en brouillard et environnement brumeux

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 142, *Cleaning equipment for air and other gases*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 195, *Cleaning equipment for air and other gases*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 29461 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 29461 series provides a way to compare these products in a similar method and define what criteria are important for air intake filter systems for rotary machinery performance protection. The aim is to compare the performance of different filters and filter types with respect to the operating conditions in which they will be finally used.

Air intake filter system of rotary machinery is an important part of the whole gas turbine and air compressor systems. It usually consists of filter elements with a suitable way to be installed. The operating environment of rotary machinery including gas turbine and compressor and their air intake filtration units are complicated and challenging. Air filters intercept water mist and droplets when air passes through the air filter unit in case the equipment is working in rainy, foggy, hazy or other high-humidity environments or a local production environment which contains a large amount of water vapour, e.g. the cooling tower. If excessive water holds up, the performance of filters can be affected; pressure drop rises rapidly, causing a shut down in severe cases.

Reliability and non-break down operation of rotary machinery are regarded as a top priority for the end users, with the rapidly rising pressure drop under high-humidity conditions usually being their main concern. There are rotary machinery operating accidents caused by high-humidity conditions all over the world, whether it be inland or along the river or coastal.

To meet the requirements of production and operation, the water endurance performance of air filter elements needs to be considered besides assessing the performance of initial pressure drop, filtration efficiency and dust-holding capacity, especially when the air filter elements are used in high-humidity environments or intake air contains a large quantity of liquid droplets.

This document provides a water endurance test method for filter elements and can be used for evaluating performance variation trends of filter elements when encountering water and fog. This document can be used for:

— product development for filter manufacturers;

— supplier selection for end users;

— development of water endurance media by media manufacturers.

This document provides a repeatable, easy-to-conduct and economical test method, which is applicable to pulse-jet cleaning filter elements and filter elements for general ventilation.

Air intake filter systems for rotary machinery — Test methods —

Part 2: Filter element endurance test in fog and mist environments

1 Scope

This document specifies general test requirements, the test rig and equipment, the test materials and the test procedure and report for determining water endurance performance of air filter elements used in air intake filter systems for rotary machinery such as stationary gas turbines, compressors and other stationary internal combustion engines.

The test evaluates water endurance performance of air filter elements under laboratory conditions. The performance results obtained in accordance with this document cannot be quantitatively applied (by themselves) to predict performance in service with regard to water endurance and lifetime.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16890-2:2022, *Air filters for general ventilation — Part 2: Measurement of fractional efficiency and air flow resistance*

3 Terms and definitions

For the purposes of this document the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Air flow and pressure drop

3.1.1
air flow rate
volume of air flowing through the filter per unit time

[SOURCE: ISO 29464:2017, 3.1.24]

3.1.2
test air flow rate
volumetric airflow rate used for testing

[SOURCE: ISO 29464:2017, 3.3.2]