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Air quality — Test method for filtration characterization of cleanable filter media

*Qualité de l'air — Méthode d'essai pour la caractérisation de la filtration
des filtres lavables*



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 11057 was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 1, *Stationary source emissions*.

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Introduction

Cleanable filters are usually employed for the separation of particles from gases containing dust concentrations in the range of some hundred milligrams per cubic metre up to some hundred grams per cubic metre. Depending on the inlet dust concentrations concerned, a dust cake is more or less rapidly formed upon the surface of the filter medium which is periodically removed in order to maintain the filtration process. With most filters in use at the time of publication, this is usually accomplished by injecting a pulse of compressed air from the clean-gas side, i.e. inside the filter bag or cartridge. The design service life of these filters is usually 2 years to 4 years. They provide clean-gas concentrations of some milligrams per cubic metre without an excessive rise in residual pressure drop for the cleaned filter and a low cleaning frequency, respectively.

Although extensive investigations have been carried out concerning the operating conditions and design of filters and cleaning systems as well as the design and selection of the filter media (References [14] to [17]), the layout and operation of bag filters are still extensively based on data which were empirically obtained in industrial-sized installations or pilot plants.

The systematic characterization and evaluation of filter media with respect to their relevant long-term operational properties (filtration and cleaning behaviour) and emission, in addition to their well-defined textile properties, are still a major problem not only for the developers and manufacturers of filter media, but also for the producers and users of filter installations.

Therefore there is a demand for improved methods for the characterization and evaluation of cleanable filter media. This demand concerns data allowing statements about the filtration properties of a medium in long-term operation, which exceed the data supplied by filter media manufacturers about the non-dusted material.

This International Standard is based on VDI 3926 Part 1:2004^[13], ASTM D6830-02:2008^[8], JIS Z 8909-1:2005^[10], and GB/T 6719:2009^[9].