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## **Stationary source emissions — Determination of mass concentration of particulate matter (dust) at low concentrations — Manual gravimetric method**

*Émissions de sources fixes — Détermination d'une faible concentration en  
masse de matières particulaires (poussières) — Méthode gravimétrique  
manuelle*



Reference number  
ISO 12141:2002(E)

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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 12141 was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 1, *Stationary source emissions*.

Annexes A, C, E and F form a normative part of this International Standard. Annexes B, D, G, H and I of this International Standard are for information only.

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## Introduction

This method was developed from close liaison and cooperation between ISO/TC 146/SC 1/WG 11 and CEN/TC 264/WG 5, resulting in the preparation of this International Standard and the European Standard EN 13284-1. This International Standard is similar to EN 13284-1 with additional emphasis given on the use of high-volume sampling techniques for the measurement of dust at low concentrations. It also gives procedures for extending the range of measurement of ISO 9096:1992 to lower concentrations. As in ISO 9096:1992, a representative, integrated sample is extracted from the flue gas and particulate matter entrained in the gas sample is separated by a filter. The pre-weighed filter is subsequently dried and weighed. Any increase in the mass is attributed to the collection of particulate matter on the filter.

To meet the specifications of this International Standard, the particulate sample must be weighed to a specified level of accuracy. At low dust concentrations, this level of accuracy may be achieved by:

- a) exercising extreme care in weighing, as per procedures of this standard,
- b) extending the sampling time at conventional sampling rates, or
- c) sampling at higher rates for conventional sampling times (high-volume sampling).

This International Standard in addition differs from ISO 9096:1992 by requiring the measurement of the mass of filter blanks, specifying weighing procedures.

This method may be used for calibration of automated monitoring systems (AMSs) (see ISO 10155). If the waste gas contains unstable, reactive or semivolatile substances, the measurement will depend on the filtration temperature, and in-stack methods may be more applicable than out-stack methods for the calibration of automated monitoring systems.