AS 4323.1:2021

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Stationary source emissions

Method 1: Selection of sampling positions and measurement of velocity in stacks

AS 4323.1:2021

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The following are represented on Committee EV-007:

ACT Health
Australian Aluminium Council
Australian Industry Group
Australian Institute of Refrigeration Air Conditioning and Heating
Clean Air Society of Australia and New Zealand
Department of Environment and Science, Qld
Department of Planning, Industry and Environment, NSW
Department of Water and Environmental Regulation, WA
Environment Protection Authority, Vic.
National Association of Testing Authorities Australia
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Additional Interests

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Waikato Regional Council (NZ)
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Contents

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EV-007, Methods for Examination of Air, to supersede AS 4323.1:1995, *Stationary source emissions, Method 1: Selection of sampling positions*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

Standards Australia wishes to acknowledge the contribution of the EV-007-01 Stationary Source Emission Testing Subcommittee to the development of this document.

The objective of this document is to provide regulatory and testing bodies with procedures for selecting sampling positions for stacks (including exhaust ducts and other similar outlets) in order to obtain representative velocity, temperature, flowrate, pollutant concentration and mass rate of emission measurements. This document also describes the apparatus, procedures and calculations required to measure gas velocity and flowrate.

A list of all parts in the AS(AS/NZS) 4323 series can be found in the Standards Australia online catalogue.

The major changes in this edition are as follows:

(a) Clarification of aspects associated with sampling plane section.

(b) Addition of the procedures to be followed when measuring exhaust gas velocity and flowrate.

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The terms “normative” and “informative” are used in Standards to define the application of the appendix to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Australian Standard®

Stationary source emissions

Method 1: Selection of sampling positions and measurement of velocity in stacks

1 Scope

This document specifies a method for the selection of sampling positions for obtaining representative samples of pollutants emitted from stacks (including exhaust ducts and other similar outlets), together with a description of the apparatus, procedures and calculations used to measure gas velocity and flowrate.

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.

NOTE Documents for informative purposes are listed in the Bibliography.

AS 1657, *Fixed platforms, walkways, stairways and ladders — Design, construction and installation*

AS ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

AS/NZS 1891.2, *Industrial fall-arrest systems and devices, Part 2: Horizontal lifeline and rail systems*

AS/NZS 1891.4, *Industrial fall-arrest systems and devices, Part 4: Selection, use and maintenance*

AS/NZS 3000, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*

ISO 3966, *Measurement of fluid flow in closed conduits — Velocity area method using Pitot static tubes*

USEPA Method 2F, *Determination of stack gas velocity and volumetric flow rate with three-dimensional probes*

3 Terms and definitions

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

3.1
access hole
hole in the stack at the extremity of a sampling traverse, through which test equipment is inserted

3.2
competent person
person who has acquired, through education, training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the task required

3.3
diameter
D
internal diameter of a circular stack or the hydraulic diameter of a non-circular stack

Note 1 to entry: The hydraulic diameter is four times the stack internal area divided by the internal perimeter.

3.4
differential pressure
difference between the pressures measured at the total and static pressure tappings of a pitot tube