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**Acoustics — Determination of airflow  
resistance —**

**Part 1:  
Static airflow method**

*Acoustique — Détermination de la résistance à l'écoulement de l'air —  
Partie 1: Méthode statique*



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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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*.

This first edition of ISO 9053-1 cancels and replaces ISO 9053:1991, which has been technically revised. The main changes are as follows:

- title changed;
- alternating airflow method deleted.

A list of all parts in the ISO 9053 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](http://www.iso.org/members.html).

# Acoustics — Determination of airflow resistance —

## Part 1: Static airflow method

### 1 Scope

This document specifies the measurement of the determination of the static airflow resistance<sup>[1,2]</sup>, in a laminar flow regime, of porous materials for acoustical applications.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1 airflow resistance

$R$

quantity defined by

$$R = \frac{\Delta p}{q_v}$$

where

$\Delta p$  is the air pressure difference, in pascal, across the test specimen with respect to the atmosphere;

$q_v$  is the volumetric airflow rate, in cubic metre per second, passing through the test specimen.

Note 1 to entry: It is expressed in pascal second per cubic metre.

#### 3.2 specific airflow resistance

$R_s$

quantity defined by

$$R_s = R \times A$$

where