



**International
Standard**

ISO 9053-1

**Acoustics — Determination of
airflow resistance —**

**Part 1:
Static method**

*Acoustique — Détermination de la résistance à l'écoulement de
l'air —*

Partie 1: Méthode statique

**Second edition
2026-05**

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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 document 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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This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 126, *Acoustic properties of building elements and of buildings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition of ISO 9053-1 cancels and replaces the first edition (ISO 9053-1:2018), which has been technically revised.

The main changes are as follows:

- [Figure 1](#) was corrected;
- addition of a Note to design calibration specimens in [5.6](#).

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.

Acoustics — Determination of airflow resistance —

Part 1: Static method

1 Scope

This document specifies the measurement of the determination of the static airflow resistance (see also References [1] and [2]) 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 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 airflow resistance

R
quantity defined by

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

where

Δp 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 metres 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

$$R_s = R \cdot A$$

where

R is the airflow resistance, in pascal second per cubic metre, of the test specimen
 A is the cross-section area, in square metres, of the test specimen perpendicular to the direction of flow

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