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Standards

Irish Standard  
I.S. EN ISO 9053-2:2020

# Acoustics - Determination of airflow resistance - Part 2: Alternating airflow method (ISO 9053-2:2020)

**I.S. EN ISO 9053-2:2020**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

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## National Foreword

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EUROPEAN STANDARD

EN ISO 9053-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## Acoustics - Determination of airflow resistance - Part 2: Alternating airflow method (ISO 9053-2:2020)

Acoustique - Détermination de la résistance à l'écoulement de l'air - Partie 2: Méthode avec écoulement d'air alternatif (ISO 9053-2:2020)

Akustik - Bestimmung des Strömungswiderstandes - Teil 2: Alternierendes Strömungsverfahren (ISO 9053-2:2020)

This European Standard was approved by CEN on 22 September 2020.

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<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

This document (EN ISO 9053-2:2020) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with Technical Committee CEN/TC 126 "Acoustic properties of building elements and of buildings" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO 9053-2:2020 has been approved by CEN as EN ISO 9053-2:2020 without any modification.

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**Acoustics — Determination of airflow  
resistance —**

**Part 2:  
Alternating airflow method**

*Acoustique — Détermination de la résistance à l'écoulement de l'air —  
Partie 2: Méthode avec écoulement d'air alternatif*



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CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
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# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Symbols</b> .....	<b>3</b>
<b>5 Principle</b> .....	<b>5</b>
<b>6 Equipment</b> .....	<b>6</b>
6.1 General.....	6
6.2 Device for producing the alternating airflow.....	6
6.3 Sound measuring device.....	7
6.4 Vessel and measurement cell.....	7
6.5 Device for measuring the static pressure.....	8
6.6 Device for measuring the frequency of the piston.....	8
<b>7 Test specimens</b> .....	<b>8</b>
7.1 Homogeneity of test specimen.....	8
7.2 Shape.....	8
7.3 Dimensions.....	8
7.3.1 Lateral dimensions.....	8
7.3.2 Thickness.....	9
7.4 Number of test specimens.....	9
<b>8 Test procedure</b> .....	<b>9</b>
<b>9 Uncertainty</b> .....	<b>10</b>
<b>10 Test report</b> .....	<b>11</b>
<b>Annex A (normative) Effective ratio of specific heats for air</b> .....	<b>12</b>
<b>Annex B (informative) Acoustic model of the flow</b> .....	<b>15</b>
<b>Annex C (informative) Calculation of uncertainty</b> .....	<b>17</b>
<b>Annex D (informative) Airflow resistance of perforated support</b> .....	<b>19</b>
<b>Bibliography</b> .....	<b>20</b>

## ISO 9053-2:2020(E)

### 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 of 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 [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 9053-2, together with ISO 9053-1:2018, cancels and replaces ISO 9053:1991, which has been technically revised.

The main changes compared to the previous edition are as follows:

- the former method B in ISO 9053:1991 has been transferred to this document;
- the requirement to the dimensions of the test specimen have been updated;
- a correction for heat conduction has been added.

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 2: Alternating airflow method

### 1 Scope

This document specifies an alternating airflow method for the determination of the airflow resistance<sup>[5], [6]</sup> of porous materials for acoustical applications.

Determination of the airflow resistance based on static flow is described in ISO 9053-1.

### 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. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

### 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 RMS air pressure difference, across the test specimen, due to the alternating airflow, in pascals;

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

Note 1 to entry: Airflow resistance is expressed in pascals seconds per cubic metre.

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