
**Akustika - Gradiva za uporabo v akustiki – Določevanje pretočnega upora zraka
(ISO 9053:1991)**

Acoustics - Materials for acoustical applications - Determination of airflow resistance
(ISO 9053:1991)

Akustik - Materialien für akustische Anwendungen - Bestimmung des
Strömungswiderstandes (ISO 9053:1991)

Acoustique - Matériaux pour applications acoustiques - Détermination de la résistance a
l'écoulement de l'air (ISO 9053:1991)

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Ta slovenski standard je istoveten z: EN 29053:1993

ICS:

17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general
91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials

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en

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EUROPEAN STANDARD

EN 29053:1993

NORME EUROPÉENNE

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Descriptors: Acoustics, acoustic insulation, insulating materials acoustic, porous materials, gas permeability tests, air flow

English version

**Acoustics - Materials for acoustical applications -
Determination of airflow resistance
(ISO 9053:1991)**

Acoustique - Matériaux pour applications
acoustiques - Détermination de la résistance à
l'écoulement de l'air (ISO 9053:1991)

Akustik - Materialien für akustische
Anwendungen - Bestimmung des
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This European Standard was approved by CEN on 1993-02-12. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

Following the positive result of the primary questionnaire, CEN Technical Board decided to submit

ISO 9053:1991 Acoustics - Materials for acoustical applications - Determination of airflow resistance
to the formal vote. The result was positive.

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 September 1993, and conflicting national standards shall be withdrawn at the latest by September 1993.

In accordance with the CEN/CENELEC Internal Regulations, following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 9053:1991 has been adopted by CEN without any modification.

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INTERNATIONAL STANDARD

ISO
9053

First edition
1991-07-01

Acoustics — Materials for acoustical applications — Determination of airflow resistance

iTeh STANDARD PREVIEW

*Acoustique — Matériaux pour applications acoustiques — Détermination
de la résistance à l'écoulement de l'air*

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ISO 9053:1991(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.

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.

International Standard ISO 9053 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

Annex A of this International Standard is for information only.

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Introduction

The airflow resistance of porous materials indicates, in an indirect manner, some of their structural properties. It may be used to establish correlations between the structure of these materials and some of their acoustical properties (for example, absorption, attenuation, etc.).

This International Standard is, therefore, useful for two purposes:

- a) in relating some of the acoustical properties of porous materials to their structure and their method of manufacture;
- b) in ensuring product quality (quality control).

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Acoustics — Materials for acoustical applications — Determination of airflow resistance

1 Scope

This International Standard specifies two methods for the determination of the airflow resistance of porous materials for acoustical applications.

It is applicable to test specimens cut from products of porous materials.

NOTE 1 Details of publications relating to flow behaviour under both laminar and turbulent conditions are given in annex A.

2 Definitions

For the purposes of this International Standard, the following definitions apply.

2.1 airflow resistance, R : A quantity defined by

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

where

Δp is the air pressure difference, in pascals, 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.

It is expressed in pascal seconds per cubic metre.

2.2 specific airflow resistance, R_s : A quantity defined by

$$R_s = RA$$

where

R is the airflow resistance, in pascal seconds per cubic metre, of the test specimen;

A is the cross-sectional area, in square metres, of the test specimen perpendicular to the direction of flow.

It is expressed in pascal seconds per metre.

2.3 airflow resistivity, r : If the material is considered as being homogeneous, that quantity defined by

$$r = \frac{R_s}{d}$$

where

R_s is the specific airflow resistance, in pascal seconds per metre, of the test specimen;

d is the thickness, in metres, of the test specimen in the direction of flow.

It is expressed in pascal seconds per square metre.

2.4 linear airflow velocity, u : A quantity defined by

$$u = \frac{q_V}{A}$$

where

q_V is the volumetric airflow rate, in cubic metres per second, passing through the test specimen;

A is the cross-sectional area, in square metres, of the test specimen.

It is expressed in metres per second.