SLOVENSKI STANDARD
SIST EN ISO 11691:1997

01-april-1997

Akustika - Merjenje dodanega dušenja dušilnika zvoka v kanalu brez pretoka - Laboratorijska informativna metoda (ISO 11691:1995)

Acoustics - Measurement of insertion loss of ducted silencers without flow - Laboratory survey method (ISO 11691:1995)

Akustik - Messung des Einfügungsdämpfungsmaßes von Schalldämpfern in Kanälen ohne Strömung - Laborverfahren der Genauigkeitsklasse 3 (ISO 11691:1995)

Acoustique - Détermination de la perte d'insertion de silencieux en conduit sans écoulement - Méthode de mesurage en laboratoire (ISO 11691:1995)

Ta slovenski standard je istoveten z: **EN ISO 11691:1995**

ICS:

17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general
91.120.20	Akustika v stavbah. Zvočna izolacija	Acoustics in building. Sound insulation
91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning

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English version

Acoustics - Measurement of insertion loss of ducted silencers without flow - Laboratory survey method (ISO 11691:1995)

Acoustique - Détermination de la perte d'insertion de silencieux en conduit sans écoulement - Méthode de mesurage en laboratoire (ISO 11691:1995)

Akustik - Messungen an Schalldämpfern in Kanälen ohne Strömung - Laborverfahren der Genauigkeitsklasse 3 (ISO 11691:1995)

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CEN

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

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

Foreword

The text of the International Standard ISO 11691:1995 has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with CEN/TC 211 "Acoustics".

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of an identical text or by endorsement, at the latest by February 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

This European Standard has been prepared under a Mandate given to CEN by the Commission of the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

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Endorsement notice

The text of the International Standard ISO 11691:1995 has been approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 11691

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Acoustics — Measurement of insertion loss of ducted silencers without flow — Laboratory survey method

Acoustique — Détermination de la perte d'insertion de silencieux en conduit sans écoulement — Méthode de mesurage en laboratoire

Reference number
ISO 11691:1995(E)

Foreword

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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 11691 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

Annex A of this International Standard is for information only.

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Introduction

The insertion loss of absorbent silencers is generally not affected by the air flow, provided that the flow velocity does not exceed approximately 20 m/s in the narrowest cross-section of the silencer. In practice, non-uniform flow distributions must be considered, therefore the limit velocity of 20 m/s corresponds to a design velocity of 10 m/s to 15 m/s.

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Acoustics — Measurement of insertion loss of ducted silencers without flow — Laboratory survey method

1 Scope

1.1 General

This International Standard specifies a laboratory substitution method to determine the insertion loss without flow of ducted, mainly absorbent, circular and rectangular silencers, as well as other duct elements for use in ventilating and air-conditioning systems.

NOTE 1 Laboratory measurement procedures for ducted silencers with superimposed flow are described in ISO 7235.

This International Standard is applicable to silencers where the design velocity does not exceed 15 m/s. As the method does not include self-generated flow noise, this International Standard is not suitable for tests on silencers where this type of noise is of great importance for the evaluation of the silencer performance.

The insertion loss determined according to this International Standard in a laboratory will not necessarily be the same as the insertion loss that will be obtained in an installation in the field. Different sound and flow fields in the duct will yield different results. As this International Standard requires regular test ducts, the results may include some flanking transmission via structural vibrations in the duct walls, that sets an upper limit to the insertion loss that can be determined.

NOTE 2 ISO 7235 gives methods for determining this limit.

This International Standard is intended to be used for circular silencers with diameters of 80 mm to 2 000 mm or rectangular silencers with cross-sectional areas within the same range.

1.2 Measurement uncertainty

Exact information on the precision of the method cannot be given at this time. Therefore this International Standard is denoted a survey standard.

Interlaboratory tests are necessary for the determination of the standard deviation of reproducibility, σ_R, of the method (relevant terms and methods are given in ISO 5725-1). It is, however, estimated that this method will have a σ_R which is comparable to that of ISO 7235. See table 1.

Table 1 — Estimated values of the standard deviation of reproducibility

Midband frequencies of one-third-octave band Hz	Standard deviation of reproducibility, σ_R dB
50 to 1 250	2
1 600 to 10 000	3

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3741:1988, *Acoustics — Determination of sound power levels of noise sources — Precision methods for broad-band sources in reverberation rooms.*