SIST

SLOVENSKI STANDARD
SIST EN 20140-2:1997

01-april-1997

Akustika - Merjenje zvočne izolirnosti v zgradbah in zvočne izolirnosti gradbenih elementov - 2. del: Ugotavljanje, preverjanje in uporaba natančnosti podatkov (ISO 140-2:1991)

Acoustics - Measurement of sound insulation in buildings and of building elements - Part 2: Determination, verification and application of precision data (ISO 140-2:1991)

Akustik - Messung der Schalldämmung in Bauten und von Bauteilen - Teil 2: Angabe von Genauigkeitsanforderungen (ISO 140-2:1991)

Acoustique - Mesurage de l'isolation acoustique des immeubles et des éléments de construction - Partie 2: Détermination, vérification et application des données de fidélité (ISO 140-2:1991)

Ta slovenski standard je istoveten z: EN 20140-2:1993

ICS:

17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general
91.060.01	Stavbni elementi na splošno	Elements of buildings in general
91.120.20	Akustika v stavbah. Zvočna izolacija	Acoustics in building. Sound insulation

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EUROPEAN STANDARD

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Descriptors: Acoustics, acoustic measurements, acoustic insulation, buildings, structural members, acoustic tests, data, fidelity

English version

Acoustics - Measurement of sound insulation in buildings and of building elements - Part 2: Determination, verification and application of precision data (ISO 140-2:1991)

Acoustique - Mesurage de l'isolation acoustique des immeubles et des éléments de construction - Partie 2: Détermination, vérification et application des données de fidélité (ISO 140-2:1991)

Akustik - Messung der Schalldämmung in Bauten und von Bauteilen - Teil 2: Angabe von Genauigkeitsanforderungen (ISO 140-2:1991)

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

Foreword

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

ISO 140-2:1991 Acoustics - Measurement of sound insulation in buildings and of building elements Part 2: Determination, verification and application of precision data

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 140-2:1991 has been adopted by CEN without any modification.

INTERNATIONAL STANDARD

ISO 140-2

Second edition
1991-06-15

Acoustics — Measurement of sound insulation in buildings and of building elements —

Part 2:
Determination, verification and application of precision data

Acoustique — Mesurage de l'isolation acoustique des immeubles et des éléments de construction —

Partie 2: Détermination, vérification et application des données de fidélité

Reference number
ISO 140-2:1991(E)

Contents

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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.

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 140-2 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

This second edition cancels and replaces the first edition (ISO 140-2:1978), of which it constitutes a technical revision.

ISO 140 consists of the following parts, under the general title *Acoustics — Measurement of sound insulation in buildings and of building elements*:

— *Part 1: Requirements for laboratories*

— *Part 2: Determination, verification and application of precision data*

— *Part 3: Laboratory measurements of airborne sound insulation of building elements*

— *Part 4: Field measurements of airborne sound insulation between rooms*

— *Part 5: Field measurements of airborne sound insulation of facade elements and facades*

— *Part 6: Laboratory measurements of impact sound insulation of floors*

— *Part 7: Field measurements of impact sound insulation of floors*

— *Part 8: Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a standard floor*

— *Part 9: Laboratory measurement of room-to-room airborne sound insulation of a suspended ceiling with a plenum above it*

— *Part 10: Laboratory measurement of airborne sound insulation of small building elements*

Annex A forms an integral part of this part of ISO 140. Annexes B and C are for information only.

Introduction

It is not possible to specify completely the construction of laboratory test facilities or the sound field conditions obtained. Therefore some details of the test facilities and procedures in ISO 140-3 to ISO 140-9 are left to the choice of the operator. This, together with the statistical character of sound fields within rooms, leads to uncertainties in the results due to non-systematic (random) and systematic influences.

Random influences can be determined by repeated independent measurements under essentially similar conditions.

Systematic influences (for example, size and shape of test rooms, mounting conditions of the test specimen, calibration of measuring equipment) cannot be determined by a simple procedure. Generally, comparison measurements in different test facilities and knowledge of the random uncertainties under these conditions are necessary in order to assess the systematic influences.

In agreement with modern statistical methods, the concepts of repeatability and reproducibility obtained from complete test results are used in this part of ISO 140, rather than variances of the individual quantities that make up the test result. Repeatability values and reproducibility values offer a simple means of stating the precision of a test method and of measurements carried out according to the test method.

The repeatability and reproducibility are two extremes, the first measuring the minimum and the second the maximum variability in test results. Other intermediate measures of variability between these two extremes are conceivable, such as repetition of tests within a laboratory over longer time intervals, or by different operators, or including the effects of recalibration, but these are not considered in this part of ISO 140.

If, in a particular situation, some intermediate measure should be needed, it must be clearly defined, together with the circumstances under which it applies and the method by which it should be determined.

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Acoustics — Measurement of sound insulation in buildings and of building elements —

Part 2:
Determination, verification and application of precision data

1 Scope

This part of ISO 140 specifies procedures for assessing the uncertainty in the acoustical measurements described in ISO 140-3 to ISO 140-9 due to random and systematic influences.

It gives guidelines for

— determination of the repeatability value r and the reproducibility value R;

— verification of repeatability values r and reproducibility values R for different measurement arrangements in one laboratory and for comparisons between different laboratories;

— application of repeatability values r and reproducibility values R in practice.

Tentative repeatability values and reproducibility values of the test methods according to ISO 140-3, ISO 140-4 and ISO 140-6 to ISO 140-8 are given in annex A.

NOTE 1 At present no data are available for ISO 140-5 and ISO 140-9.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 140. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 140 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 140-3:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3: Laboratory measurements of airborne sound insulation of building elements.*

ISO 140-4:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 4: Field measurements of airborne sound insulation between rooms.*

ISO 140-5:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 5: Field measurements of airborne sound insulation of facade elements and facades.*

ISO 140-6:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 6: Laboratory measurements of impact sound insulation of floors.*

ISO 140-7:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 7: Field measurements of impact sound insulation of floors.*

ISO 140-8:1978, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 8: Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a standard floor.*

ISO 140-9:1985, *Acoustics — Measurements of sound insulation in buildings and of building elements — Part 9: Laboratory measurement of room-to-room airborne sound insulation of a suspended ceiling with a plenum above it.*

ISO 717-1:1982, *Acoustics — Rating of sound insulation in buildings and of building elements —*