Australian Standard™

Acoustics—Method for laboratory measurement of airborne sound insulation of building elements

Building Code of Australia
Primary referenced Standard

Standards Australia

This Australian Standard was prepared by Committee AV-004, Acoustics, Architectural. It was approved on behalf of the Council of Standards Australia on 29 March 2002 and published on 24 April 2002.

The following interests are represented on Committee AV-004:

Association of Australian Acoustical Consultants

Australian Acoustical Society

Australian Building Codes Board

Australian Chamber of Commerce and Industry

Australian Defence Force Academy

Australian Hearing

Building Industry Authority, New Zealand

CSIRO Building, Construction and Engineering

Department of Public Works and Services, N.S.W.

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This Standard was issued in draft form for comment as DR 00335.

Australian Standard™

Acoustics—Method for laboratory measurement of airborne sound insulation of building elements

Originated as AS 1191—1976.
Previous edition AS 1191—1985.
Third edition 2002.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 4467 2

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee AV-004, Acoustics, Architectural to supersede AS 1191—1985, *Acoustics—Method for laboratory measurement of airborne sound transmission loss of building elements*. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard specifies the method for the laboratory measurement of the airborne sound reduction index of building elements such as walls, floor/ceiling assemblies, doors, windows and other space-dividing elements. Requirements and guidance for the rooms used for measurement are provided. In view of the size constraints of many existing test facilities in Australia, and the high cost of developing large, new facilities, this edition incorporates recommendations on the assessment of diffusivity of sound fields in transmission rooms and on making measurements in low-frequency bands. These recommendations are particularly intended to assist users of smaller test facilities in making valid measurements and in preparing accurate and unambiguous test reports.

This Standard is based on and conforms closely to the essential principles of ISO 140 *Acoustics — Measurement of sound insulation in buildings and of building elements*, Part 1: *Requirements for laboratory test facilities with suppressed flanking transmission* and Part 3: *Laboratory measurements of airborne sound insulation of building elements*.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

Acoustics—Method for laboratory measurement of airborne sound insulation of building elements

1 SCOPE

This Standard specifies the method for measuring the airborne sound reduction index of building elements such as walls, floor/ceiling assemblies, doors, windows, and other space-dividing elements.

2 APPLICATION

2.1 General

This Standard provides a method for evaluating the sound insulating performance of an isolated building element in the laboratory. The values of sound reduction index measured according to this Standard can be used to calculate a single number characterizing the acoustical performance of the building element, namely, the weighted sound reduction index (R_w) defined in AS/NZS 1276.1.

2.2 Building Code of Australia

This Standard will be referenced in the Building Code of Australia by way of BCA Amendment No. 11 to be published by 1 July 2002 thereby superseding the previous edition, AS 1191—1985, which will be withdrawn 12 months from the date of publication of this edition.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1045 Acoustics—Measurement of sound absorption in a reverberation room

1633 Acoustics—Glossary of terms and related symbols

1259 Acoustics—Sound level meters
1259.1 Part 1: Non-integrating
1259.2 Part 2: Integrating—Averaging

AS/NZS

1276 Acoustics—Rating of sound insulation in buildings and of building elements
1276.1 Part 1: Airborne sound insulation

4476 Acoustics—Octave-band and fractional-octave-band filters

ISO

140 Acoustics—Measurement of sound insulation in buildings and of building elements
140-3 Part 3: Laboratory measurements of airborne sound insulation of building elements

Guide to the expression of uncertainty in measurement

4 DEFINITIONS

For the purpose of this Standard, the definitions in AS 1633 and those below apply.