

Australian Standard™

**Acoustics—Rating of sound insulation  
in buildings and of building elements**

**Part 2: Impact sound insulation**

This Australian Standard was prepared by Committee AV-004, Acoustics Architectural. It was approved on behalf of the Council of Standards Australia on 12 January 2004 and published on 10 March 2004.

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The following are represented on Committee AV-004:

Association of Australian Acoustical Consultants  
Australian Acoustica Society  
Australian Building Codes Board  
Australian Chamber of Commerce and Industry  
Australian Defence Force Academy  
Australian Hearing  
Building Industry Authority, New Zealand  
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## PREFACE

This Standard was prepared by the Australian members of Joint Australia/New Zealand Standards Committee AV-004, Acoustics—Architectural. 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.

The objective of this Standard is to define and provide methods for determining single-number quantities for the impact sound insulation in buildings.

It should be noted that achievement of a weighted normalized or weighted standardized impact sound level that is at or below a design numeric value does not mean that all forms of impact to the floor will be judged acceptable by people living in the space below; particularly in regard to low frequency noises in timber constructions.

This Standard is identical with and has been reproduced from ISO 717-2:1996, *Acoustics—Rating of sound insulation in buildings and of building elements, Part 2: Impact sound insulation*.

This Standard includes references to the ISO Standards listed below. Committee AV-004 is considering the adoption of these International Standards as Australian/New Zealand Standards.

### ISO

- 140 Acoustics—Measurement of sound insulation in building and of building elements
- 140-6 Part 6: Laboratory measurement of impact sound insulation of floors
- 140-7 Part 7: Field measurements of impact sound insulation of floors
- 140-8 Part 8: Laboratory measurements of the reduction of transmitted impact noise by floor covering on a standard floor

This Standard will be referenced in the Building Code of Australia in BCA2004 to be published in May 2004.

Attention is drawn to the fact that the certain documents referenced in ISO 717-2 had not been published at the time the source document was released. Users are advised to use the latest edition of these documents.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text ‘this part of ISO 717’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

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

## INTRODUCTION

Methods of measurement of impact sound insulation in buildings and of building elements have been standardized in ISO 140-6, ISO 140-7 and ISO 140-8. These methods give values for the impact sound insulation which are frequency dependent. The purpose of this part of ISO 717 is to standardize a method whereby the frequency-dependent values of impact sound insulation can be converted into a single number characterizing the acoustical performance.

The method has been widely used since 1968. However, since there is some evidence that it could be improved, a spectrum adaptation term is added and it is recommended to gather experience with this.

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AUSTRALIAN STANDARD

**Acoustics—Rating of sound insulation in buildings and of building elements**

**Part 2:  
Impact sound insulation**

**1 Scope**

This part of ISO 717

- a) defines single-number quantities for the impact sound insulation in buildings and of floors;
- b) gives rules for determining these quantities from the results of measurements carried out in one-third-octave bands in accordance with ISO 140-6 and ISO 140-7, and in octave bands in accordance with that option in ISO 140-7 for field measurements only; and
- c) defines single-number quantities for the impact sound reduction of floor coverings and floating floors from the results of measurements carried out in accordance with ISO 140-8.

The single-number quantities in accordance with this part of ISO 717 are intended for rating the impact sound insulation and for simplifying the formulation of acoustical requirements in building codes. The required numerical values of the single-number quantities are specified according to varying needs.

The rating of results from measurements carried out over an enlarged frequency range is dealt with in annex A.

A method for obtaining single-number quantities for bare massive floors according to their performance in combination with floor coverings is described in annex B.

1) To be published. (Revision of ISO 140-6:1978)

2) To be published. (Revision of ISO 140-7:1978)

3) To be published. (Revision of ISO 140-8:1978)

An example of the calculation of a single-number quantity is given in annex C.

**2 Normative references**

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 717. 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 717 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 140-6:—<sup>1)</sup>, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 6: Laboratory measurements of impact sound insulation of floors.*

ISO 140-7:—<sup>2)</sup>, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 7: Field measurements of impact sound insulation of floors.*

ISO 140-8:—<sup>3)</sup>, *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.*