AS 3826-1998

Australian Standard[™]

Strengthening existing buildings for earthquake

This Australian Standard was prepared by Committee BD/76, Strengthening Existing Buildings for Earthquake. It was approved on behalf of the Council of Standards Australia on 15 May 1998 and published on 5 June 1998.

The following interests are represented on Committee BD/76:

The Association of Consulting Engineers

Australian Building Codes Board

Bureau of Steel Manufactures of Australia

Department of Local Government W.A.

Institution of Engineers Australia

Master Builders Australia

Newcastle City Council

NSW Department of Public Works and Services

University of Newcastle

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Strengthening existing buildings for earthquake

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PREFACE

This Standard was prepared by the Standards Australia Committee BD/76, Strengthening Existing Buildings for Earthquake. It should be read in conjunction with the following Standards:

AS

- 1170 Minimum design loads on structures (known as the SAA Loading Code)
- 1170.1 Part 1: Dead and live loads and load combinations
- 1170.4 Part 4: Earthquake loads
- 1720 Timber structures (known as the SAA Timber Structures Code)
- 1720.1 Part 1: Design methods
- 3600 Concrete structures
- 3700 Masonry structures
- 4100 Steel structures

AS/NZS

4600 Cold-formed steel structures

The objective of this Standard is to provide users with specifications covering the assessment and analysis of the earthquake resistance of existing buildings, and the design and detailing of any required strengthening in accordance with the strength limit state. In the event of an earthquake, the strengthening is intended to minimize the risk of loss of life and injury due to structural collapse or damage. This Standard is not intended to prevent damage to the building.

For loads resulting from these infrequent events, a greater degree of risk is acceptable in existing buildings than that implied in the design of new buildings. This is achieved by requiring the building be able to resist only a portion of the loads specified in the loading Standards. For live loads, the existing load capacity of the structure is not reduced.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard Strengthening existing buildings for earthquake

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out minimum requirements for the assessment and analysis of the earthquake resistance of existing buildings, and the design and detailing of any required strengthening in accordance with the strength limit state.

This Standard does not apply to Class 1 and Class 10 buildings as defined in the Building Code of Australia.

There are no additional provisions for heritage buildings in this Standard.

NOTE: For background information pertaining to this Standard, see Appendix A.

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- 1170 Minimum design loads on structures (known as the SAA Loading Code)
- 1170.1 Part 1: Dead and live loads and load combinations
- 1170.4 Part 4: Earthquake loads
- 1275 Metric screw threads for fasteners
- 1720 Timber structures (known as the SAA Timber Structures Code)
- 1720.1 Part 1: Design methods
- 3600 Concrete structures
- 3700 Masonry structures
- 4100 Steel structures

AS/NZS

4455 Masonry units and segmental pavers

4600 Cold-formed steel structures

1.3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.3.1 Can—implies a capability or possibility and refers to the ability of the user of the Standard, or to a possibility that is available or that might occur.

1.3.2 Earthquake load—the design load determined in accordance with AS 1170.4.

- **1.3.3** May—indicates the existence of an option.
- **1.3.4 Reinforced concrete**—as defined in AS 3600.
- **1.3.5 Reinforced masonry**—as defined in AS 3700.
- **1.3.6** Shall—indicates that a statement is mandatory.
- **1.3.7** Should—indicates a recommendation.
- **1.3.8 Structural steel frames**—as defined in AS 4100.
- **1.3.9** Threshold load—the limit state load determined in accordance with Clause 2.4.

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