

Australian/New Zealand Standard™

**Materials for the thermal insulation of  
buildings**

**Part 1: General criteria and technical  
provisions**



## **AS/NZS 4859.1:2002**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-058, Thermal performance and insulation of dwellings. It was approved on behalf of the Council of Standards Australia on 28 August 2002 and on behalf of the Council of Standards New Zealand on 20 August 2002. This Standard was published on 15 October 2002.

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Australian Cellulose Insulation Manufacturers Association  
Australian Glass and Glazing Association  
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# Australian/New Zealand Standard™

## Materials for the thermal insulation of buildings

### Part 1: General criteria and technical provisions

Originated in Australia as part of AS 2352—1980, AS 2461—1981, AS 2462—1981, AS 2463—1981, AS 2464.1—1981, AS 2464.2—1981, AS 2464.3—1983, AS 2464.4—1981, AS 2464.5—1985, AS 2464.6—1983, AS 2464.7—1990 and AS 3742—1990

Originated in New Zealand as NZS 1340—1959.

Previous edition NZS 4222—1992

AS 2352—1980, AS 2461—1981, AS 2462.—1981 AS 2463—1981, AS 2464.1—1981, AS 2464.2—1981, AS 2464.3—1983, AS 2464.4—1981, AS 2464.5—1985, AS 2464.6—1983, AS 2464.7—1990 and AS 3742—1990 and NZS 4222—1992 jointly revised, amalgamated and redesignated as AS/NZS 4859.1—2002.

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-058, Thermal Performance and Insulation of Dwellings, to supersede the following standards:

## AS

- |             |  |
|-------------|--|
| 2352—1980   | Glossary of terms for thermal insulation of buildings  |
| 2461—1981   | Mineral wool thermal insulation—Loose fill   |
| 2462—1981   | Cellulosic fibre thermal insulation  |
| 2463—1981   | Sea grass bulk thermal insulation  |
| 2464.1—1981 | Methods of testing thermal insulation, Part 1: Corrosiveness of thermal insulation   |
| 2464.2—1981 | Methods of testing thermal insulation, Part 2: Bulk density of blown fibrous loose-fill thermal insulation   |
| 2464.3—1983 | Methods of testing thermal insulation, Part 3: Thermal resistance of low-density fibrous loose-fill thermal insulation   |
| 2464.4—1981 | Methods of testing thermal insulation, Part 4: Length, width and thickness of batt or blanket type thermal insulation  |
| 2464.5—1985 | Methods of testing thermal insulation, Part 5: Steady-state thermal transmission properties by means of the heat flow meter                                    |
| 2464.6—1983 | Methods of testing thermal insulation, Part 6: Steady-state thermal transmission properties by means of the guarded hotplate                                   |
| 2464.7—1990 | Methods of testing thermal insulation, Part 7: Determination of the average thermal resistance of low-density mineral wool thermal insulation—Batt and blanket |
| 3742—1990   | Mineral wool thermal insulation—Batt and blanket   |

## NZS

- |           |   |
|-----------|---|
| 4222:1992 | Materials for the thermal insulation of buildings |
|-----------|---|

*This Standard incorporates Amendment No. 1 (December 2006). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to address the standardization and performance verification requirements of all thermal insulation materials that may be used in buildings. Insulation materials or assemblies are broadly classified into groups, having different testing requirements over a number of aspects of performance. These classifications may be applied to all unspecified products and materials according to definable characteristics. This Standard also provides specific requirements for individual types of insulation materials.

Particular emphasis has been given to the development of clear and concise requirements for determination and labelling of thermal performance, a primary performance requirement for these materials. Another consideration is the effect of durability.

Standards Australia draws attention to the fact that this is not an installation Standard. Installation requirements can be obtained from other sources, including AS 3999. The sections of this Standard that relate to individual types of insulation materials may make some reference to installation matters where these are closely linked to the specification and performance requirements of the material or assembly.

This Standard does not deal with performance requirements for systems or materials that have some primary function other than providing thermal insulation. Where some other primary purpose is to be served by the material or system (e.g., sarking, structural panels etc.) compliance with this Standard alone shall not be seen as sufficient. In those cases reference to other appropriate Standards shall be made.

In this Standard, notes are for information and guidance only and compliance with them is not a requirement of the Standard.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard**  
**Materials for the thermal insulation of buildings**

Part 1: General criteria and technical provisions

## SECTION 1 SCOPE AND GENERAL

A1 **1.1 SCOPE**

This Standard specifies requirements and methods of test for materials that are added to, or incorporated in, opaque envelopes of buildings and building services, including ductwork and pipework, to provide thermal insulation by moderating the flow of heat through these envelopes and building services.

This Standard does not cover materials for the insulation of windows or other glazing. Although this Standard covers thermal performance of insulation, there may be requirements in the Building Code of Australia, or elsewhere, for the same material to have other properties such as for acoustic isolation or fire properties. Further, in a regulatory situation, a requirement for thermal performance cannot compromise any other required performance.

Specific requirements for individual materials or insulation types are given in Sections 5 to 9 of this Standard and in the following Standards:

- (a) Rigid cellular polyurethane (RC/PUR) ..... AS 1366.1.
- (b) Rigid cellular polyisocyanurate (RC/PIR)..... AS 1366.2.
- (c) Rigid cellular polystyrene Moulded (RC/PS-M)..... AS 1366.3.
- (d) Rigid cellular polystyrene Extruded (RC/PS-E) ..... AS 1366.4.
- (e) Urea-formaldehyde foam thermal insulation—In situ set foam ..... AS 4073.

The scope of this Standard does not cover requirements for fire performance.

**1.2 APPLICATION**

This Standard is applicable to the full range of climatic and environmental conditions that exist under normal circumstances. It is intended for use by regulatory and specifying authorities, insulation manufacturers, developers, architects, builders, building engineers, property managers and commercial and residential building owners.

In order to comply with this Standard, a material or assembly that falls within the scope of AS 1366.1, AS 1366.2, AS 1366.3, AS 1366.4 or AS 4073 shall, apart from fire performance, comply with the requirements of that standard unless overridden by this Standard.

Materials or assemblies that do not fall within the scope of one of the above Standards or Sections 5 to 9 of this Standard, need only comply with Sections 1 to 4 of this Standard

NOTE: Alternative means for demonstrating compliance with this Standard are given in Appendix A.