AS/NZS 4859.2:2018

Australian/New Zealand Standard™

Thermal insulation materials for buildings

Part 2: Design

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-058, Thermal Insulation. It was approved on behalf of the Council of Standards Australia on 8 October 2018 and by the New Zealand Standards Approval Board on 6 November 2018.
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The following are represented on Committee BD-058:

Aluminium Foil Insulation Association
Australian Building Codes Board
Australian Cellulose Insulation Manufacturers Association
Australian Institute of Refrigeration Air Conditioning and Heating
Australian Professional Thermography Association
AWTA Product Testing
Building Research Association of New Zealand
Consumers Federation of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-058, Thermal Insulation, to supersede, in part, AS/NZS 4859.1:2002 (in particular Appendix K).

The objective of this Standard is to provide clear and concise requirements for determination and reporting of total R-values and system R-values to promote greater consistency of these calculations within the Australian and New Zealand marketplaces.

This Standard covers the following:

(a) Standard assumptions for the calculation of system and total thermal resistance of insulation products used in thermal calculations.

(b) A prescriptive calculation methodology for determining the thermal resistance of airspaces with parallel bounding surfaces of varying emissivity.

(c) A range of conversion coefficients for multiple insulation types.

(d) Prescriptive reporting requirements for demonstrating total R-value and system R-value calculations.

In this Standard, notes to the main text are for information and guidance only.

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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1 SCOPE

This Standard specifies the assumptions to be used in calculating the system R-values and total R-values of building constructions, which include IR reflective or IR non-reflective airspaces, for the purposes of designing building components to be used in thermal insulation systems.

2 APPLICATION

The calculations performed in accordance with this Standard shall not be used for the purposes of labelling.

Where declared material R-values are required for these calculations, they shall be determined in accordance with AS/NZS 4859.1.

NOTE: Labelling requirements are specified in AS/NZS 4859.1.

3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS/NZS
4200 Pliable building membranes and underlays
4200.1 Part 1: Materials

4859 Materials for the thermal insulation of buildings
4859.1 Part 1: General criteria and technical provisions

NZS
4214 Methods of determining the total thermal resistance of parts of buildings

ASTM
C1371 Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers

E408 Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques

AIRAH
AIRAH Handbook, Fifth Edition (2013)

4 DEFINITIONS

4.1 Material thermal resistance (R_m)

A resistance associated with a material, specified as a material, *R*. Excludes surface film resistances (see conductance, film and surface coefficient) declared in accordance with AS/NZS 4859.1. [Unit: $(m^2.K)/W$]