

Australian/New Zealand Standard™

Pliable building membranes and underlays

Part 1: Materials



AS/NZS 4200.1:2017

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 7 October 2016 and by the New Zealand Standards Approval Board on 17 November 2016.

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The following are represented on Committee BD-058:

Aluminium Foil Insulation Association
Australasian Fire and Emergency Service Authorities Council
Australian Building Codes Board
Australian Cellulose Insulation Manufacturers Association
Australian Professional Thermography Association
Building Research Association of New Zealand
Community Energy Network
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-058, Thermal Insulation, to supersede AS/NZS 4200.1:1994.

The objective of this Standard is to provide a means of testing and evaluating pliable building membrane materials for various applications within a building structure.

The objective of this revision is to provide broader material classifications for pliable building membranes to assist users in making informed decisions on how to select the right material for the chosen application, including classification of electrical conductivity.

It is acknowledged that further research is required to better define the Duty Classifications for all material types in common use. When this work is completed the Duty Classifications will be reviewed and if justified, proposed for revision in a future amendment to this Standard. This revision also includes optional tests for material properties that determine long-term durability which will generate market data able to be used within the next revision.

This Standard is intended to be read in conjunction with AS 4200.2, *Pliable building membranes*, Part 2: *Installation requirements*.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

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Part 1: Materials

1 SCOPE

This Standard sets out requirements for materials for use as pliable building membranes (also known as ‘sarking’ or ‘underlay’), when used either independently or as a facing to other materials, such as insulation materials, for any one or more of the following control functions:

- (a) Water control.
- (b) Thermal control.
- (c) Vapour control.
- (d) Air control.

This Standard does not cover requirements for materials used in the following applications:

- (i) Air-handling ducts and building services.
- (ii) Under concrete slabs on-ground.
- (iii) Waterproofing above flat concrete roofs.

NOTE: Thermal performance of reflective insulation pliable building membranes and faced building blankets is specified in AS/NZS 4859.1.

2 APPLICATION

This Standard is intended for use in the assessment and classification of pliable building membrane materials.

3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS

1301	Methods of test for pulp and paper
1301.423	Folding endurance of paper—Kohler-Molin methods
1301.448s	Tensile strength of paper or paperboard (constant rate of elongation method)
1530	Methods for fire tests on building materials, components and structures
1530.2	Method 2: Test for flammability of materials
2001	Methods of test for textiles
2001.2	Method 2: Physical tests
2001.2.19	Method 19: Determination of bursting force of textile fabrics—Ball burst method
3706	Geotextiles—Methods of test
3706.4	Method 4: Determination of burst strength—California bearing ratio (CBR)—Plunger method

AS	
4200	Pliable building membranes and underlays
4200.2	Part 2: Installation requirements
AS/NZS	
3100	Approval and test specification—General requirements for electrical equipment
4201	Pliable building membranes and underlays—Methods of test
4201.1	Method 1: Resistance to dry delamination
4201.2	Method 2: Resistance to wet delamination
4201.3	Method 3: Shrinkage
4201.4	Method 4: Resistance to water penetration
4201.5	Method 5: Emittance
ASTM	
E96	Standard Test methods for Water Vapour Transmission of Materials
TAPPI	Technical Association of the Pulp and Paper Industry
T470	Edge tearing resistance of paper*

4 DEFINITIONS

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

4.1 Air control membrane

A membrane installed to limit air transfer between each side of the membrane.

NOTE: Air control membranes are classified as air barriers.

4.2 Cross-direction

Perpendicular to machine direction.

4.3 Facing

A pliable building membrane bonded to one or more sides of another material.

4.4 Lateral direction

For materials with reinforcement running at an angle not less than 45° from machine direction, the direction parallel to the most dominant of such reinforcement.

NOTE: Otherwise lateral direction is equivalent to cross-direction.

4.5 Machine direction

The lengthwise direction of the pliable building membrane roll.

4.6 Permeance

Measure of steady state time rate of diffusion per unit area, normal to the specified parallel surfaces under a specified unit pressure difference.

4.7 Pliable building membrane

A material that is able to be folded back on itself without causing structural damage to the product that affects its material properties.

4.8 Shrinkage

The percentage reduction, in linear dimension, that occurs under specific test conditions.

* Available by contacting TAPPI directly (www.tappi.org)