

AS 1366.3—1992

Reconfirmed 2018

Australian Standard[®]

**Rigid cellular plastics sheets for
thermal insulation**

**Part 3: Rigid cellular polystyrene—
Moulded (RC/PS—M)**

This Australian Standard was prepared by Committee PL/16, Rigid Cellular Plastics for Thermal Insulation. It was approved on behalf of the Council of Standards Australia on 13 December 1991 and published on 16 March 1992.

The following interests are represented on Committee PL/16:

Board of Fire Commissioners, N.S.W.
Commercial Refrigeration Manufacturers Association of Australia
CSIRO, Division of Building, Construction and Engineering
Master Builders Construction and Housing Association
Metropolitan Fire Brigades Board, Melbourne
The Plastics Institute of Australia
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STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1366.3–1992

**Rigid cellular plastics sheets for thermal insulation
Part 3: Rigid cellular polystyrene–Moulded (RC/PS–M)**

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NOTES

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PREFACE

This Standard was prepared by the Standards Australia Committee on Rigid Cellular Plastics for Thermal Insulation, under the direction of the Plastics Standards Board, to supersede AS 1366.3—1982.

AS 1366 has four parts, the other parts being:

Part 1: *Rigid cellular polyurethane (RC/PUR)*

Part 2: *Rigid cellular polyisocyanurate (RC/PIR)*

Part 4: *Rigid cellular polystyrene—Extruded (RC/PS-E)*

The products dealt with by this Standard are mainly intermediate products used as insulants, either by their manufacturer or by another manufacturer, in the production of thermal insulation products, e.g. building panels, cool store panels, insulation for bulk containers.

Density has been used over a number of years as a means of classifying cellular plastics. Because of advances in technology, similar physical characteristics may be achieved by materials of different density; for this reason the density of the material is not included in the list of specified physical properties. Nominal densities of rigid cellular polystyrene are included in Appendix B for guidance purposes only.

The subsequent processing of the sheets is the determining factor in the fire hazard associated with the use of these materials, i.e. the potential for harm to life or property resulting from the occurrence of a fire. For example, when used in buildings the cellular plastics may need to be faced with lining materials in order to achieve adequate fire performance. Thus it is not relevant to include a fire performance test for the materials specified in this Standard. The users of these materials should apply suitable fire performance tests to these products in their finished form. Purchasers of products fabricated from these materials should specify such tests in their purchasing agreements. For building structures and components, suitable tests are described in AS 1530, *Methods for fire tests on building materials, components and structures*, Part 3: *Simultaneous determination of ignitability, flame propagation, heat release and smoke release*, and Part 4: *Fire-resistance test of elements of building construction*.

A combustion characteristics test has been included; however, it must be emphasized that a combustion characteristics test gives no indication of the fire hazard associated with the use of the sheet, but is used to compare relative combustion properties of the material. The test has been included to ensure a specified minimum level of fire retardancy in the sheet.

Reference should be made to AS 2627, *Thermal insulation of dwellings—Design guide*, for installation of thermal insulation in domestic dwellings and for guidance on correct placing of vapour barriers for protection in situations where temperature differentials may occur. For industrial and commercial applications, expert advice should be sought.

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STANDARDS AUSTRALIA

Australian Standard

Rigid cellular plastics sheets for thermal insulation

Part 3: Rigid cellular polystyrene—Moulded (RC/PS—M)

1 SCOPE This Standard specifies requirements for rigid cellular polystyrene in the form of sheets, board, blocks and cut shapes for thermal insulation purposes.

These requirements are intended for use in quality control and material specification, and are not necessarily applicable for end use design requirements.

NOTES:

- 1 Alternative methods for determining compliance with this Standard are given in Appendix A.
- 2 Guidance to purchasers on recommended applications and nominal densities for each class of rigid cellular polystyrene is given in Appendix B.

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

AS	
1199	Sampling procedures and tables for inspection by attributes
1399	Guide to AS 1199—Sampling procedures and tables for inspection by attribute
2122	Combustion propagation characteristics of plastics
2122.1	Part 1: Determination of flame propagation following surface ignition of vertically oriented specimens of cellular plastics
2464	Methods of testing thermal insulation
2464.5	Method 5: Steady-state thermal transmission properties by means of the heat flow meter
2464.6	Method 6: Steady-state thermal transmission properties by means of the guarded hotplate
2498	Methods of testing rigid cellular plastics
2498.1	Method 1: Sampling and conditioning
2498.3	Method 3: Determination of compressive stress
2498.4	Method 4: Determination of cross-breaking strength
2498.5	Method 5: Determination of water vapour transmission rate
2498.6	Method 6: Determination of dimensional stability
2498.8	Method 8: Determination of water absorption
2900	Quantities, units, and symbols
2900.4	Part 4: Quantities and units of heat
3900	Quality systems—Guide to selection and use
3904	Quality management and quality system elements
SAA	
HB18	Guidelines for third-party certification and accreditation
HB18.44	General rules for ISO or IEC international third-party certification schemes for products
ISO	
7850	Cellular plastics, rigid—Determination of compressive creep

3 DEFINITIONS For the purposes of this Standard, the definitions below apply.

3.1 Rigid cellular plastics sheet—a rectangular flat slab of cellular plastics material of definite uniform thickness.

3.2 Rigid cellular polystyrene—moulded (RC/PS—M)—sheet expanded from expandable polystyrene beads which is moulded to shape or cut from continuously or discontinuously produced blocks. In Australia RC/PS—M is commonly known as expanded polystyrene (EPS).

3.3 Thermal resistance*—a measure of the thermal properties of building materials, measured in square metre kelvin per watt $m^2.K/W$.

4 CLASSIFICATION Rigid cellular polystyrene—moulded (RC/PS—M) shall be classified on the basis of its performance in relation to the physical characteristics as given in Table 2.

* In AS 2900.4, 'thermal resistance' is called 'thermal insulance', with the symbol M.