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Australian Standard 1366, Part 2—1981

RIGID CELLULAR PLASTICS SHEETS FOR THERMAL INSULATION Part 2—RIGID CELLULAR POLYISOCYANURATE

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Insulation) ... NSC 9330]



STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Board of Fire Commissioners of New South Wales
Commercial Refrigeration Manufacturers Association of Australia
CSIRO, Division of Building Research
Department of Housing and Construction
Experimental Building Station
Metropolitan Fire Brigades Board, Melbourne
Plastics Institute of Australia Incorporated
Railways of Australia Committee

This standard, prepared by Committee PL/16, Rigid Cellular Plastics for Thermal Insulation, was approved on behalf of the Council of the Standards Association of Australia on 10 July 1981, and was published on 7 September 1981.

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This standard was issued in draft form for public review as DR 76042.

AUSTRALIAN STANDARD

**RIGID CELLULAR PLASTICS SHEETS
FOR THERMAL INSULATION**

**Part 2
RIGID CELLULAR
POLYISOCYANURATE**

AS 1366, Part 2—1981

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PREFACE

This standard was prepared by the Association's Committee for Rigid Cellular Plastics for Thermal Insulation under the direction of the Plastics Standards Board. It is one of three parts: Part 1 covers rigid cellular polyurethane, and Part 3* rigid cellular polystyrene.

The products covered 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 apparent density; for this reason the density of the material is not included in the list of specified physical properties.

International (ISO) test methods have been adopted instead of the more conventionally used ASTM methods.

The subsequent processing referred to above 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 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, Parts 3 and 4.

A combustion characteristics test has been included as a quality control test of the sheet. 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, The Installation of Above Ceiling Insulation Material*, 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.

This standard may require reference to the following standards:

| | |
|------------|--|
| AS 1199 | Sampling Procedures and Tables for Inspection by Attributes |
| AS 1327 | Standard Environments for Conditioning and Testing Plastics Materials |
| AS 1399 | Guide to AS 1199, Sampling Procedures and Tables for Inspection by Attributes |
| AS 1530 | Methods for Fire Tests on Building Materials and Structures Part 3—Tests for Early Fire Hazard Properties of Materials Part 4—Fire-resistance Test of Structures |
| AS 1821-23 | Suppliers Quality Control Systems |
| AS 2000 | Guide to AS 1821-1823, Suppliers Quality Control Systems |
| AS 2122 | Combustion Propagation Characteristics of Plastics Part 1—Determination of Flame Propagation following Surface Ignition of Vertically Oriented Specimens of Cellular Plastics |
| AS 2464 | Methods of Testing Thermal Insulation Part 6—Steady-state Thermal Transmission Properties of Thermal Insulation Materials by Means of the Guarded Hotplate* |
| AS 2498 | Methods of Testing Rigid Cellular Plastics* |

*In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

RIGID CELLULAR PLASTICS SHEETS FOR THERMAL INSULATION

PART 2—RIGID CELLULAR POLYISOCYANURATE

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

NOTE: Advisory information on the determination of compliance of a 'lot' with this standard is given in Appendix A.

2 DEFINITIONS. For the purposes of this standard, the following definitions apply:

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

2.2 Rigid cellular polyisocyanurate (RC/PIR)—a cellular material produced under specific conditions by the trimerization of a polymeric di-isocyanate in the presence of a minor amount of a polyhydroxyl compound expanded with a blowing agent.

3 COLOUR. The colour of rigid cellular polyisocyanurate (RC/PIR) shall be orange.

NOTES:

1. This colour is intended to indicate that the RC/PIR complies with the requirements of this standard, in particular those for flame propagation.
2. The purchaser may specify another colour.

4 APPEARANCE. There are a number of properties such as uniformity of cell structure, homogeneity, splits, streaks and discoloration which cannot be sensibly quantified.

NOTE: Where any of these are considered to be important, arrangements should be made between purchaser and supplier.

5 DIMENSIONS AND FINISH.

5.1 Rough Shapes. Rough shapes shall be finished to specified dimensions.

NOTE: Dimensions are a matter for agreement between the purchaser and the supplier.

5.2 Cut Shapes. Cut shapes shall be finished to the specified size and in accordance with the particular application.

NOTE: Size is a matter for agreement between the purchaser and the supplier.

5.3 Rectangular Shapes. Rectangular shapes shall be cut straight and square to conform to the requirements of Table 1.

NOTE: In applications where flatness or special tolerances are considered to be important, arrangements should be made between purchaser and supplier.

6 TEST SPECIMENS. Test specimens shall be cut from the samples according to the requirements of the test methods. Where the thickness of the sample is less than that specified, but 12.5 mm or thicker, the specimens may be prepared by plying-up samples. The plies may be held together by tape, dowel pins, or similar means applied outside the test area. No adhesive shall be applied to the faces of the plies.

For sheet of thickness less than 12.5 mm, the supplier shall, on request, supply suitable samples of the required thickness from a block made from the same lot of raw materials.

TABLE 1
DIMENSIONAL TOLERANCES FOR RECTANGULAR SHEETS OF RIGID CELLULAR POLYISOCYANURATE (RC/PIR)

| millimetres | | | |
|-----------------|-------------------------------|---|------------------------|
| Length or width | Tolerances on length or width | Tolerances on difference in length of diagonals of a rectangular sheet* | Tolerance on thickness |
| ≤ 100 | + 1.0 - 0.5 | 6 | + 1.0 - 0.5 |
| > 100 ≤ 1000 | + 1.5 - 0.5 | 6 | + 1.0 - 0.5 |
| > 1000 ≤ 2000 | + 2.0 - 1.0 | 10 | + 1.0 - 0.5 |
| > 2000 ≤ 4000 | + 3.5 - 1.5 | 16 | + 1.0 - 0.5 |
| > 4000 | + 6.0 - 2.0 | 26 | + 1.0 - 0.5 |

*The tolerance levels for the difference in length of the diagonals are based on the length (longer dimension) of the sheet.