

WITHDRAWN

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Australian Standard 2370—1980

PVAC EMULSION ADHESIVES FOR WOOD



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

THE FOLLOWING SCIENTIFIC, INDUSTRIAL, CONSUMER AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Adhesives and Sealants Manufacturers Association of Australia
Australian Chemical Industry Council
Australian Council of Furniture Manufacturers
Australian Federation of Consumer Organizations
Confederation of Australian Industry
CSIRO, Division of Building Research
Department of Defence
Department of Productivity
Footwear Manufacturers Federal Executive Council
Plastics Institute of Australia
Plywood Association of Australia
Printing and Allied Trades Employers Federation of Australia
Railways of Australia Committee
Society of Automotive Engineers Australasia
Telecom Australia

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AUSTRALIAN STANDARD

PVAC EMULSION ADHESIVES FOR WOOD

AS 2370—1980

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PREFACE

This standard was prepared by the Association's Committee on Adhesives under the direction of the Chemical Standards Board.

In the preparation of the standard, cognizance was taken of the following:

- BS 3544 Methods of Test for Polyvinyl Acetate Adhesives for Wood
- BS 4071 Polyvinyl Acetate (PVA) Emulsion Adhesives for Wood
- CSA O112.4 Polyvinyl Adhesives for Wood
- JIS K 6804 Polyvinyl Acetate Emulsion Adhesives for Woods

PVAC emulsion is available as one-component or two-component adhesives; both are covered in this standard. Emulsions marketed in Australia vary considerably in their strength after wetting, and for that reason the standard details two different levels of water resistance.

This standard may require reference to the following Australian and International standards:

- AS 1309 Glossary of Terms used in the Adhesives Industry
- AS 1321 Methods for the Sampling and Testing of Adhesives
 - Part 1—Sampling
 - Part 3—Bond Strength of Cured Wood-to-Wood Adhesives in Shear
 - Part 4—Wearing Effect of Set Adhesives on Cutting Edges
 - Part 5—Behaviour of Cured Wood-to-wood Adhesives under Long-term Loading
 - Part 6.1—Preferred Conditions for Testing the Water Resistance of Adhesives—Cellulosic Substrates
 - Part 7—Determination of pH Value of Aqueous Extracts of Uncured Adhesives and of their Components, and of Cured Adhesive Films
 - Part 9—Brookfield Viscosity of Liquid Adhesives
 - Part 10—Determination of Non-volatile Matter (Solids Content) of Adhesives
- AS 1728 Types of Timber Surfaces
- AS 2272 Marine Plywood

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
PVAC EMULSION ADHESIVES FOR WOOD

1 SCOPE. This standard specifies requirements for poly(vinyl acetate) (PVAC) emulsion adhesives, in one-component and two-component preparations, intended for the bonding of wood-to-wood.

NOTES:

1. The poly(vinyl acetate) emulsion adhesives specified are those prepared by using vinyl acetate monomer as the main active component and water as the medium.
2. A standard for PVAC emulsion adhesives specifically for plywood manufacture is in course of preparation.

2 CLASSIFICATION.

2.1 Types. For purposes of this standard, PVAC emulsion adhesives shall be classified according to their resistance to water, as follows:

Type I—Non-water-resistant adhesives.

Type II—Water-resistant adhesives.

2.2 Compliance. Type II adhesives shall comply with all test requirements specified in this standard. Type I adhesives shall comply with all test requirements except that of Clause 8.4.2.

3 DEFINITIONS. Terms used in this standard shall be interpreted in accordance with AS 1309.

4 SAMPLING. Selection of the adhesive sample shall be in accordance with AS 1321, Part 1.

5 TEST CONDITIONS. Unless otherwise specified, all mixing and tests on the adhesive shall be carried out at a temperature of $23 \pm 2^\circ\text{C}$ and a relative humidity of 50 ± 5 percent. The adhesives shall be used and mixed exactly as prescribed by the supplier.

6 CONSISTENCY. The adhesive shall be uniform, smooth and free from coarse particles. The adhesive shall be suitable for the required method of application.

NOTE: The method of application is a matter for agreement between the purchaser and the supplier.

7 PRODUCT INFORMATION. The manufacturer shall supply all necessary information on the use of the adhesive and on bonding procedures such as mixing, spreading*, pot life, open and closed assembly times, shelf life and cleaning instructions.

The information on Type II adhesives shall include the conditions necessary to obtain water resistance.

The information may be stated on the pack or included in the carton for adhesives for industrial application. It shall be included with or printed on each retail pack.

NOTE: A retail pack is one primarily intended for non-industrial applications and sold through retail stores dealing directly with the public.

8 TEST REQUIREMENTS.

8.1 Viscosity. When tested in accordance with AS 1321, Part 9, the adhesive shall have a Brookfield viscosity within the range specified by the supplier.

8.2 pH. When tested in accordance with AS 1321, Part 7, the pH of one-component adhesives or of mixed two-component adhesives shall be between 3 and 8.

Caution: The use of copper in the pumping and spreading equipment of the adhesive should be avoided.

8.3 Non-volatile Matter (Solids Content). When tested in accordance with AS 1321, Part 10, the adhesive shall have non-volatile matter within the range specified by the supplier.

8.4 Shear Strength.**8.4.1 Tested dry.**

(a) *Test specimen.* A lap joint tensile specimen complying with Clause 2.1.2 of AS 1321, Part 3, shall be used, except that the test panels shall have been prepared from marine plywood (Coachwood) complying with AS 2272 and shall have a thickness of 4.5 ± 0.5 mm.

(b) *Requirement.* When tested in accordance with AS 1321, Part 3, the mean load at failure shall be not less than 2000 N.

NOTE: Because of the possibility of surface inactivation during or in plywood manufacture, the surfaces to be bonded should be sanded to a surface equal to or better than an abrasive surface Type 1 in accordance with AS 1728, not more than 8 h prior to assembly of the specimen.

8.4.2 Tested wet (for Type II adhesives only).

(a) *Test specimens.* Lap joint tensile specimens complying with Clause 2.1.2 of AS 1321, Part 3, shall be used except that the test panels shall have been prepared from marine plywood (Coachwood) complying with AS 2272 and shall have a thickness of 4.5 ± 0.5 mm. Two specimens shall be pre-soaked in accordance with AS 1321, Part 6.1, as follows:

(i) One specimen soaked to test condition 2.

(ii) One specimen soaked to test condition 6.

(b) *Requirement.* When separate samples of a Type II adhesive are tested wet in accordance with AS 1321, Part 3, the mean load at failure for each test condition ((a) (i) and (a) (ii)) shall be not less than 1000 N.

*Including spreading rate and whether single or double spread.