

Australian Standard<sup>®</sup>

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**Adhesives for timber and timber products**

**Part 2: Polymer emulsion adhesives**

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The following interests are represented on Committee CH/17:

Adhesives and Sealants Manufacturers Association of Australia  
Chemical Confederation of Australia  
Confederation of Australian Industry  
CSIRO, Division of Building, Construction and Engineering  
Footwear Manufacturers Association of Australia  
Plywood Association of Australia  
Printing and Allied Trades Employers Federation of Australia  
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## PREFACE

This Standard was prepared by the Standards Australia Committee on Adhesives under the direction of the Chemical Standards Board to supersede AS 2370—1980, PVAC Emulsion Adhesives for Wood.

This Standard constitutes Part 2 of a series of Standards for adhesives for timber and timber products. Part 1 deals with adhesives for plywood manufacture, whereas Part 3 deals with adhesives for nonstructural applications.

In this edition polymer emulsion adhesives are designated Types 1 to 5 according to their suitability for use, i.e. how well they may retain their bond strength over time under different conditions. Also, a water-soak/conditioning treatment prior to shear strength testing has been included.

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## STANDARDS AUSTRALIA

## Australian Standard

## Adhesives for timber and timber products

## Part 2: Polymer emulsion adhesives

**1 SCOPE** This Standard specifies requirements for polymer emulsion adhesives, in one-component and two-component preparations, intended for wood-to-wood bonding.

NOTE: The Standard is applicable to polymer emulsion adhesives which are prepared by emulsion polymerization of specific monomers with water as the continuous phase.

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

## AS

- 1309 Glossary of terms used in the adhesives industry  
 1321 Methods for the sampling and testing of adhesives  
 1321.1 Part 1: Sampling  
 1321.3 Part 3: Bond strength of cured wood-to-wood adhesives in shear  
 1321.4 Part 4: Wearing effect of set adhesives on cutting edges  
 1321.5 Part 5: Behaviour of cured wood-to-wood adhesives under long-term loading  
 1321.7 Part 7: pH value of aqueous extracts of uncured adhesives and of their components, and of cured adhesive films  
 1321.9 Part 9: Brookfield viscosity of liquid adhesives  
 1321.10 Part 10: Determination of non-volatile matter (solids content) of adhesives

## ISO

- 2115 Plastics—Aqueous dispersions of polymers and copolymers—Determination of white point temperature and minimum film-forming temperature

**3 DEFINITIONS** For the purpose of this Standard, the definitions given in AS 1309 and those below apply.

**3.1 White point temperature**—the limiting temperature below which an opaque mass and above which a transparent film are formed.

**3.2 Minimum film-forming temperature**—the limiting temperature above which a continuous homogeneous film without cracks is formed.

**4 CLASSIFICATION** Polymer emulsion adhesives are classified according to their suitability for use over a long period under different environmental conditions. On this basis the adhesives are designated as follows:

*Type 1 Adhesive*—Suitable for all weather exposure, or exposure to continuous or intermittent wet internal environments, in non-structural applications.

*Type 2 Adhesive*—Suitable for protected external environmental exposure with high humidity and with intermittent wetting, e.g. external doors and windows, in non-structural applications.

*Type 3 Adhesive*—Suitable for interior use with high humidity and with occasional wetting, e.g. bathroom, kitchen and laundry.

*Type 4 Adhesive*—Suitable for interior use with high humidity, e.g. an internal tropical climate.

*Type 5 Adhesive*—Suitable for interior use with low humidity, e.g. doors, furniture and panelling.

**5 SAMPLING** Selection of the adhesive sample shall be in accordance with AS 1321.1.

**6 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  $50 \pm 5$  percent. The adhesives shall be used and mixed exactly as prescribed by the supplier.

**7 PRODUCT CHARACTERISTICS**

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

**7.2 Viscosity** When tested in accordance with AS 1321.9, the adhesives shall have a Brookfield viscosity within the range specified by the supplier.