

AS 2131—1987

Australian Standard<sup>®</sup>

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**ADHESIVES—  
FOR BONDING DECORATIVE  
THERMOSET LAMINATES  
(CONTACT ADHESIVES)**

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This Australian Standard was prepared by Committee CH/17, Adhesives. It was approved on behalf of the Council of the Standards Association of Australia on 10 July 1987 and published on 1 September 1987.

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The following interests are represented on Committee CH/17:

Adhesives & Sealants Manufacturers Association of Australia  
Australian Chemical Industry Council  
Australian Council of Furniture Manufacturers  
Australian Institute of Packaging  
Confederation of Australian Industry  
CSIRO, Division of Building Research  
Department of Defence  
Footwear Manufacturers Association of Australia  
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DECORATIVE THERMOSET  
LAMINATES (CONTACT  
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## PREFACE

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

It is a revision of the 1978 edition and differs from it in that the method for determining bond strength in shear has been altered and a method for determining the optimum open assembly time has been included. Modifications to the doctor blade (Figure A1) have been made to improve vertical stability, facilitate gap-setting and reduce blade drag on adhesive film.

Although the Standard is applicable primarily to adhesives for decorative laminates, the adhesives will also contact-bond a wide variety of other surfaces.

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## CONTENTS

	<i>Page</i>
1 SCOPE .....	3
2 REFERENCED DOCUMENTS .....	3
3 DEFINITIONS .....	3
4 PRODUCT INFORMATION .....	3
5 SAMPLING .....	3
6 TEST CONDITIONS .....	3
7 TEST REQUIREMENTS .....	3
8 LABELLING AND PACKAGING .....	3
APPENDICES	
A METHOD FOR DETERMINING BOND STRENGTH IN PEEL .....	5
B METHOD FOR DETERMINING BOND STRENGTH IN SHEAR .....	10
C METHOD FOR DETERMINING THE EFFECT OF ELEVATED TEMPERATURE IN SHEAR (HEAT RESISTANCE) .....	12
D METHOD FOR DETERMINING CLEAVAGE RESISTANCE AT ELEVATED TEMPERATURE .....	14
E METHOD FOR DETERMINING OPTIMUM OPEN ASSEMBLY TIME .....	16

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## STANDARDS ASSOCIATION OF AUSTRALIA

## Australian Standard

**ADHESIVES — FOR BONDING DECORATIVE THERMOSET LAMINATES  
(CONTACT ADHESIVES)**

**1 SCOPE.** This Standard applies to sprayable adhesives and brushable adhesives (including those for application by scraper) intended for the bonding, on the contact bond principle, of decorative thermoset laminated sheets to materials such as timber, metal, and particleboards.

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

- AS 1309 Glossary of Terms Used in the Adhesive Industry.
- AS 1321 Methods for the Sampling and Testing of Adhesives.  
Part 1 — Sampling.  
Part 9 — Brookfield Viscosity of Liquid Adhesives.  
Part 10— Non-volatile Matter (Solids Content).
- AS 1820 Loomstate Cotton Duck.
- AS 1863 Coated Abrasives (Technical Products).
- AS 2193 Methods for Calibration and Grading of Force-Measuring Systems of Testing Machines.
- AS 2272 Marine Plywood.
- AS K130 Decorative Thermosetting Laminated Sheet.

**3 DEFINITIONS.** For the purposes of this Standard, the definition below applies.

*Decorative thermoset laminated sheet* — a laminated plastics sheet consisting essentially of layers of fibrous sheet material such as paper, impregnated with a thermosetting condensation resin, and consolidated under heat and pressure. The top layer or layers of the sheet have a decorative colour or printed design.

Other definitions shall be in accordance with AS 1309.

**4 PRODUCT INFORMATION.** The supplier shall supply all necessary information on bonding procedures such as mixing, spreading, pot life, open and closed assembly times, as well as on shelf life and on non-volatile matter, and cleaning instructions and any material safety data.

The information may be on the pack, or supplied separately for industrial applications. Instructions for use, including cleaning up, shall be included with or printed on each retail pack.

**5 SAMPLING.** The adhesive sample for testing shall be selected in accordance with AS 1321, Part 1.

**6 TEST CONDITIONS.** Unless otherwise specified, all mixing and testing of 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 adhesive shall be mixed and used exactly as prescribed by the supplier.

**7 TEST REQUIREMENTS.**

**7.1 Viscosity.** When tested by the method described in AS 1321, Part 9, sprayable grades of contact adhesive shall have a maximum Brookfield RV viscosity of 0.5 Pa.s and brushable grades (including those for application by scraper) shall have a minimum Brookfield RV viscosity not less than 0.5 Pa.s, using spindle rotation speeds of 10 revolutions per min and spindle numbers 1 or 2 in both cases.

## NOTES:

1. Other viscosities are subject to agreement between the purchaser and the supplier.
2. Viscosity may be expressed in the Brookfield DV equivalent.

**7.2 Bond strength in peel.** When tested in accordance with Appendix A, the mean 180 degree peel strength shall be not less than 35 N per 25 mm bonded width.

**7.3 Bond strength in shear.** When tested in accordance with Appendix B, the mean bond strength in tensile shear shall be not less than 700 kPa.

**7.4 Effect of elevated temperature in shear (heat resistance).** When tested in accordance with Appendix C, the mean temperature at which failure occurs shall be not less than  $150^\circ\text{C}$ .

**7.5 Cleavage resistance at elevated temperature.** When tested in accordance with Appendix D, the mean cleavage resistance time at  $60^\circ\text{C}$  shall be not less than 5 min.

**7.6 Optimum open assembly time.** When tested in accordance with Appendix E, the optimum open assembly time of the adhesive shall be within 10 percent of that stated by the supplier.

**7.7 Accelerated ageing test.** When tested in accordance with Appendix B, after the test assembly has been aged at  $70 \pm 1^\circ\text{C}$  for 7 days, the mean bond strength in shear shall be not less than 700 kPa. The ageing shall be carried out after the test assembly has been prepared as described in Paragraph B5 of Appendix B.

**7.8 Stability.** When stored in the original unopened containers the adhesive shall comply with the requirements of Clauses 7.1 to 7.7 for at least 12 months from the date of purchase under the storage conditions recommended by the supplier. In the absence of any such recommendation, the storage temperature shall be between  $5^\circ\text{C}$  and  $27^\circ\text{C}$ .

**8 LABELLING AND PACKAGING.**

**8.1 Labelling.** Each container shall be labelled in accordance with the relevant statutory regulations.