

Australian Standard[®]

**ADHESIVES FOR UNIT LOADS
(PALLETIZING ADHESIVES)**

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
Australian Fibre Box Industry
Australian Institute of Packaging
Australian Paper Manufacturers Limited
Confederation of Australian Industry
CSIRO, Division of Building Research
Department of Agriculture, Tasmania
Department of Defence
Department of Productivity
Footwear Manufacturers Federal Executive Council
National Materials Handling Bureau
Plastics Institute of Australia Incorporated
Plywood Association of Australia
Printing and Allied Trades Employers Federation of Australia
Railways of Australia Committee
Society of Automotive Engineers—Australia
Telecom Australia

This standard, prepared by Committee CH/17, Adhesives, was approved on behalf of the Council of the Standards Association of Australia on 24 October 1978, and was published on 1 February 1979.

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important, therefore, that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

For details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This standard was issued in draft form for public review as DR 76128.

Australian Standard[®]

**ADHESIVES FOR UNIT LOADS
(PALLETIZING ADHESIVES)**

First published 1979

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 1585 6

PREFACE

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

The initial request that this work be undertaken was received from the Tasmanian State Fruit Board in relation to adhesives for use in palletizing fibreboard fruit containers.

The standard deals with adhesives for bonding of unit loads so that loads of containers may be bonded to a pallet and to themselves in such a manner as to assure secure bonding during repeated handling and transport, and yet permit satisfactory ease of separation at point of final issue without damage to the containers. Such adhesives are required to have relatively high shear strengths and low peel strengths. In order to assist the purchaser to evaluate his requirements, critical bonding parameters for the palletizing are outlined in Appendix A. It is also envisaged that this appendix may enhance co-operation between the supplier of the adhesive and the purchaser.

The standard covers a number of adhesives which are very different in chemical nature. Requirements for adhesives differ according to application. Some of the provisions in this standard such as high and low temperature resistance may be required in certain cases and not in others. In some cases, other requirements such as resistance to high humidity may also have to be taken into account.

In the event of any technical difficulties, the purchaser should consult his supplier for guidance and possible availability of technical services.

This standard refers to the following standards:

- | | |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AS 1301 | Methods of Test for Pulp and Paper
P404m—Tensile Strength of Paper and Paperboard
P411m—Water Absorptiveness of Paper and Paperboard (Cobb Test)
P415m—Standard Atmosphere for Paper Testing |
| AS 1309 | Glossary of Terms Used in the Adhesives Industry |
| AS 1321 | Methods for the Sampling and Testing of Adhesives
Part 1—Sampling
Part 9—Brookfield Viscosity of Liquid Adhesives |
| AS 1391 | Method for Tensile Testing of Metals |
| AS Z47 | Glossary of Packaging Terms |
| BS 3755 | Methods of Test for the Assessment of Odour from Packaging Materials
Use for Foodstuffs. |

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
SPECIFICATION	
1 Scope	4
2 Application	4
3 Definitions	4
4 Requirements of the Adhesive	4
5 Requirements of the Adhesive Film	5
6 Marking	6
7 Packaging	7
8 Information to be Provided by Supplier	7
APPENDICES	
A Criteria for Choosing the Adhesive and the Bonding Procedure	8
B Method for Determining the Effect of Open Assembly Time on Bond Strength in Shear of Adhesive Lap Joints	11
C Method for Determining White Point Temperature	14
D Method for Determining Bond Strength in Shear of Adhesive Lap Joint	19
E Peel Test	23
F Method for Determining Static Resistance to Slip (Coefficient of Friction)	25

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard Specification
for
ADHESIVES FOR UNIT LOADS
(PALLETIZING ADHESIVES)

1 SCOPE. This specification sets out requirements for adhesives which are used for the bonding of unit loads.

2 APPLICATION. The specification is applicable to adhesives which are primarily intended for fibreboard containers, both corrugated and solid fibre, the surfaces of which have not been coated, waxed, or otherwise treated, but which may be either printed or unprinted.

NOTES:

1. If the adhesives are used for bonding either fibreboard containers which have been treated or containers made from other materials, modification of the requirements may be necessary.
2. The purchaser should provide adequate information to the supplier of the nature of the adherends and desirable techniques. Some criteria for selecting the adhesives, and the bonding procedure are given in Appendix A.

3 DEFINITIONS. The terms used in this specification shall be interpreted in accordance with AS 1309 and AS Z47. In addition, the following definition applies:

Retackable adhesive—an adhesive that will reform a bond after the adherends have been separated and reunited. The joint may not, however, regain its full initial bond strength.

4 REQUIREMENTS OF THE ADHESIVE.

4.1 General. The adhesive shall be a homogeneous material free from lumps, dirt and foreign matter.

4.2 Viscosity. The viscosity of the material at the time of application shall be such as to allow easy application of the adhesive.

NOTES:

1. The method of application may be specified by either the purchaser or the supplier.
2. Suitable viscosities for brush and roller application are 1 Pa.s to 3 Pa.s* and for spraygun application, 0.1 Pa.s to 1 Pa.s.*
3. Viscosity may be measured by the method outlined in AS 1321.9.

4.3 Compatibility. The adhesive shall not cause degradation such as bleeding, fading or significant discoloration of the adherend (see Clause 5.3.1).

NOTE: Some adhesives may not be compatible with all adherends and the purchaser should check with the supplier for compatibility.

* 1 Pa.s = 10 poises.