

*B*OOKBINDING WITH ADHESIVES

THIRD EDITION



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This book block is unsewn bound (perfect bound)
bonded with the second generation reactive hotmelt
(Purfect 111). It has been applied via a Nordson unit.

Printed in the United Kingdom at the University Press, Cambridge

This book is de
bookbinding in
My thanks to M
the conception
hours.

synthetic basis, but may have many other products, synthetic or natural, added to make up a particular end-formula. Emulsion adhesives can vary in pH, i.e. acidity or alkalinity, in solid content, and in physical characteristics, for example low-viscosity high-solids, high-viscosity low-solids, very fast setting or quite slow, brittle or flexible.

In bookbinding, emulsion adhesives are used on endpapers, for tipping, for gluing-off operations, for lining, casing-in, spine gluing and side gluing, and on special stencil applicator case makers. They are widely used in unsewn binding as primers for special hotmelts and in other one-shot and multi-shot applications. Some can be reactivated, others are easily dried by radio-frequency units. All emulsion adhesives dry by the loss of the water carrier.

Hotmelts

Hotmelts adhesives are 100 per cent solid thermoplastic materials that flow when heated; the final bond is gained when the temperature has fallen to the ambient one, i.e. that of the material being glued. Hotmelts consist of polymers, tackifying resins, and waxes; they have the distinct advantages of being capable of extremely high tack with medium to very fast setting speeds, and of not necessitating nightly cleaning down of equipment.

Hotmelts are used mainly as one-shot adhesives for pocket-books and magazines, in multi-shot applications in the production of catalogues, and in burst binding, which, combined with a stretch lining material, may be used when a book is to be rounded and backed.

Modern hotmelts can bond the widest possible range of paper stocks, and if formulated correctly have yet to reveal any age limit.

(PUR) or reactive hotmelts

These products are 100 per cent solid moisture curing hotmelts. They are produced from a range of polymers which are blended in a special reactor. In the presence of moisture they crosslink and form a tough skin that resists re-melting; this also gives them a high degree of heat,

cold and solvent resistance. The second generation levels thus reducing conveying systems within a minute. Reactive hotmelts on difficult papers then give and hold a good block. Laboratory tests on these products.

Principles of adhesion

The mechanism of adhesion

Even a surface that is very rough when magnification, i.e. on surfaces can ever have any two surfaces with 10 per cent of their area together in two bas

Mechanical adhesion
Materials: the polymers, the surfaces intercrevices of each other in a similar way, a hairy mechanical forces grass stems. Mechanical factor to bonding rubber to textiles.

Chemical or specific adhesion
due to primary and secondary valency bonds.

This is the mechanism of being responsible for cohesive forces in forces only act over two substances to