



Jowacoll® Print sheet lamination



- Available for all established machine types
- High transparency for a perfect product
- Maximum laminate strength for print finishing
- Adhesives applicable for food packaging

INFO: Dispersion adhesives

Dispersion adhesives are water-based adhesive systems that form bonds through physical hardening by the evaporation of water. The bonding effect is provided by a polymer component which forms a film when the aqueous component evaporates. Depending on the application and the chemical basis of the adhesive, it may be necessary to add an isocyanate crosslinking agent before processing. This can increase the bond's resistance to heat and moisture. Jowat supplies a wide range of powerful Jowacoll® dispersion adhesives used in the wood-processing industry, in the paper and packaging industry, the graphics industry, as well as in the automotive, textile, and electrical industries. Dispersion adhesives of the latest generation facilitate high processing speeds with low plant costs. Another major requirement is the appearance of the bondline after film-forming: A high degree of gloss and high transparency of the dispersion adhesives, as well resistance to UV light are demanded.

Dispersion adhesives for film to print lamination

Highly refined folding boxes, book covers and other printing products set new standards in quality and appearance. Print finishers have a wide variety of possibilities for upgrading a product. One established and effective procedure is the film to print lamination of printed sheets with matt, glossy, structured, or special effects films. This results in enhanced printed surfaces of a superior quality.

The quality of the lamination depends on several factors. The application method, the materials to be bonded, and the adhesive all have a decisive impact on the laminate quality and consequently also on the appearance and value of the entire print product. For many years, solvent-based adhesives were the product of choice for this application in the past. Increased requirements regarding the environmental compatibility of manufacturing processes and the recycling properties of the substances used imposed the need for a system change in the graphics industry. Alternative systems that facilitate solvent-free laminating became absolutely necessary. In the last years, Jowat has developed and optimised a complete range of water-based adhesives for this application in close cooperation with engineering companies and print finishers.

Products from the Jowacoll® 764.xx product group have been consistently optimised over the last years to improve their performance, for instance mechanical processing characteristics, cutting resistance, coating weight, gloss, and resistance to mechanical stress, e.g. due to embossing or fold burning. In addition, the new product generation also includes several adhesives that are approved for food contact. Which of the modern laminating adhesives is the best fit for an application depends on the machine type and the application method used, as well as on the specific requirements. However, the adhesive choice can also be influenced by what type of paper or film is to be bonded and by whether it has been printed conventionally or digitally.

Before downline processing, the laminated sheets should ideally be stored for 24 to 36 hours (one-component adhesives), to allow the bond to build up sufficient strength. If necessary, the reactive, water-emulsive crosslinking agents Jowat® 195.70 or Jowat® 195.79 may be added to suitable adhesives in an amount of about 1.5 – 5 % by weight.

This is usually beneficial when increased adhesive strengths are needed, for instance on printing inks that are difficult to bond, in bonding applications with difficult substrates in bookbinding, or if the surface will be embossed in downline processing. The crosslinking agent is dosed and mixed in by the processor before application. Adding a crosslinker to the adhesive generally leads to a significant reduction of the dwell time (compound strength build-up) before downline processing.

The most widely used laminating method is to apply the wet adhesive to the film and allow it to dry, using for instance EcoSystem, Billhöfer, Wen Cuyuan, Paperplast or other machines. There are mainly two leading application technologies in the industry: Application systems with metering blades and application roller, and so-called two-roller units consisting of a metering roller with a doctor blade and an application roller. Especially the latter technology has become increasingly established in the industry over the last years.

To meet the current trends in the market, many dispersion adhesives for laminating printed sheets can also be used for the manufacturing of food packaging.

The Jowat product portfolio for printed sheet lamination supplies the optimum adhesive products for all established application methods and requirements.



Guideline for adhesive selection

WHAT TYPE OF APPLICATION SYSTEM IS USED?

- Metering blade with roller
- Two-roller system

WHAT WILL BE LAMINATED?

- Basic films
- Superior films (structured, thick...)
- On easy surfaces (light colours, mineral oil inks...)
- On demanding surfaces (dark colours, full-page prints, digital printing paper, digital printing ink, mineral oil-free inks...)

TO HOW MUCH STRESS WILL THE COMPOUND BE EXPOSED?

- Low stress (e.g. hole punching...)
- Medium stress (e.g. creasing, simple embossing after 24 h, grooving...)
- High stress (e.g. 3-side trim, embossing with very high edge definition...)

IS IT FOOD PACKAGING?

- YES
- NO

Technical information

Applications

Special adhesive for laminating pretreated (B)OPP, PET and acetate films to printed and unprinted paper and cardboard.

Directions for use

Processing with established units with metering roller or two-roller (metering roller) application systems. We recommend that all materials coming into contact with the glue are made of high-quality stainless steel (German standard V2A according to DIN EN 10027 – W No. 1.4301 or better) or of inert plastics, e.g. Teflon, PP, polyamide. The properties of the substrates and the processing conditions will influence the processes of laminating and the quality of the bond. Customer tests before use are therefore absolutely necessary to define stable process parameters and to ensure that the product is fit for purpose. The materials to be bonded should be free of dust, oil, and grease, and be completely dry. The surface tension of the films to be laminated should be above 38 mN/m. The print inks used should meet requirements of DIN ISO 2836. When processed as one-component system, crosslinking will be completed after approx. 3 days. However, downline processing may be possible earlier, depending on the following stress. This must be determined in customer tests. If the laminated compound is exposed to high mechanical stress during downline processing or if the films to be processed have a high rigidity (e.g. PET or acetate films), it is advisable to add 1.5 – 5 % of crosslinking agent Jowat® 195.70 or 195.79. When processed with the crosslinking agent, the dwell time before further processing will be reduced to approx. 24 hours, in individual cases to 12 hours.

Cleaning

Before curing, machines and equipment may be cleaned after use with warm or cold water, using Jowat® Cleaner Concentrate 192.40. Already dried adhesive can be dissolved using Jowat® Thinner 401.30. Please also observe the instructions in the corresponding technical data sheet and the safety data sheet.



Product overview

The table below provides an overview of our dispersion adhesives from the product series Jowacoll® for laminating printed sheets. The product range comprises different product types with special performance characteristics adapted to the general process requirements in laminating applications.

		BEST PRICE- PERFORMANCE	BASIC ALL-ROUNDER	P
		Jowacoll® 764.60	Jowacoll® 764.61	P
Technical data	Food packaging	yes	yes	yes
	Viscosity [s]	approx. 16	approx. 16	approx. 16
	Solids content [%]	approx. 51.5	approx. 49.0	approx. 49.0
	ph value	approx. 7.0	approx. 7.0	approx. 7.0
	Can be mixed with hardener/crosslinker	yes	yes	yes
	Appearance of dry film	colourless transparent	colourless transparent	colourless transparent
Application system	Metering blade / roller	✓	✓	✓
	Two-roller system	✓	✓	✓
Films to be laminated	OPP (coronised)	●	●	●
	PET (metallised)	●	●	●
	PET	○	●	●
	Acetate	○	○	○
	PE (corrornised)	○	○	○

The information given in this leaflet is based on practical experience and on results of tests in our laboratory, and does in no way constitute any guarantee. No liability may be derived from these indications nor from the recommendations made by our free technical advisory service. Customer trials are advised.

Jowacoll® - Print sheet lamination

The products have been developed to meet the different requirements which arise from the production process as well as from the different carrier substrates and lamination materials. If the laminated compound is exposed to high mechanical stress during downline processing or if the films to be processed have a high rigidity (e.g. PET or acetate films), it is advisable to add 1.5 – 5 % of crosslinking agent Jowat® 195.70 or 195.79 in the case of food packaging. Please contact our Sales Representatives for a more extensive advisory service and adhesive selection.

HIGH PERFORMANCE		SPECIALITY		FILM-FILM LAMINATION	
Jowacoll® 764.62		Jowacoll® 764.63		Jowacoll® 764.68	
yes	no	Core products ▼		upon request	Special products ▼
approx. 16	approx. 16			approx. 16	
approx. 49.0	approx. 49.0			approx. 51.0	
approx. 7.0	approx. 7.5			approx. 7.0	
yes	no			yes	
colourless transparent	colourless transparent			colourless transparent	
✓	✓			✓	
✓	✓				
●	●			○	
●	●			○	
●	●	○			
●	●				
○	○	○			

no guarantee of properties. In light of the huge diversity of materials and the fact that we have no influence either on the substrates or on the process, no guarantee is absolutely necessary. Before processing, please request the corresponding data sheet and observe the indications in it!

○ technically possible ● technically preferred

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The information given in this leaflet is based on test results from our laboratories as well as on experience gained in the field, and does in no way constitute any guarantee of properties. Due to the wide range of different applications, substrates, and processing methods beyond our control, no liability may be derived from these indications nor from the information provided by our free technical advisory service. Before processing, please request the corresponding data sheet and observe the information in it! Customer trials under everyday conditions, testing for suitability at normal processing conditions, and appropriate fit-for-purpose testing are absolutely necessary. For the specifications as well as further information, please refer to the latest technical data sheets.

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