



Jowapur® 3D lamination



One-component and two-component polyurethane dispersions (PUD) for the 3D lamination of furniture fronts

Full range of PU dispersions for all 3D lamination applications

High heat and moisture resistance



INFO: PU dispersions

Polyurethane dispersions are a heterogeneous mixture of at least two substances which do not or barely dissolve or react chemically with each other. One- and two-component reactive dispersions impress with superior heat and moisture resistance due to the chemical crosslinking reaction in the adhesive in addition to the physical setting process. The one- and two-component reactive polyurethane adhesives from the Jowapur® series are characterised by relatively low reactivation temperatures, excellent film formation, and high initial strength. The one-component Jowapur® polyurethane dispersions provide a wide range of benefits for processors and have been the state of the art in the lamination of 3D-formed furniture fronts for many years now.

PU dispersions for the 3D lamination of furniture fronts

Changing trends in the furniture industry dictate the design of furniture fronts and determine the requirements for 3D lamination. On one day, clean fronts mainly laminated with high-gloss PVC foils are in trend and on the next day profiled fronts laminated with more classic PVC foils with a smooth or structured surface are in demand. The technical manufacturing processes and the adhesives used have to meet the latest requirements in the industry and ensure a reliable bond.

One-component Jowapur® polyurethane dispersions provide a wide range of benefits for processors. Dosing and mixing errors are prevented with 1-component adhesives, providing a major advantage in processing compared to 2-component systems. This leads to further benefits such as easier material planning, procurement and warehousing, eliminates the cleaning of mixing units, and observation of the pot life becomes obsolete.

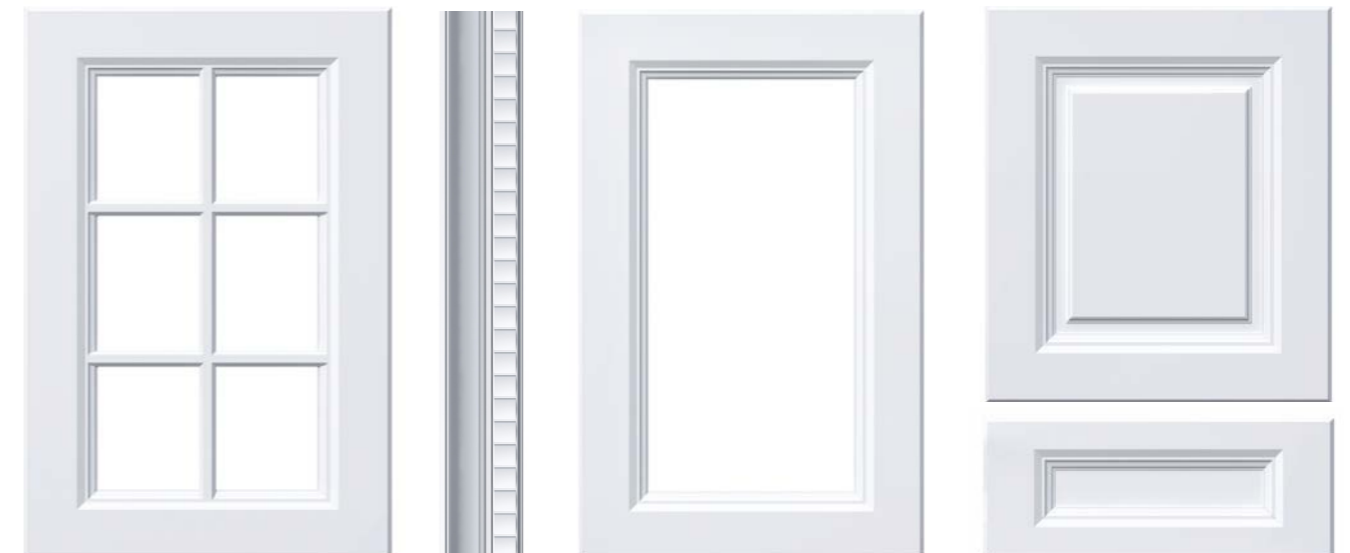
These points alone already facilitate an increase in process reliability due to a reduced failure potential.

The two-component Jowapur® polyurethane dispersions support a broad spectrum of applications due to a flexible amount (5 % – 10 %) of crosslinking agent Jowat® 195.40 which can be added to the adhesive. Therefore, the adhesive-crosslinker ratio can be adapted individually to the materials to be laminated as well as to the requirements for the bond.

PU dispersions have become established as reliable adhesives in the lamination of 3D furniture fronts and ensure superior products. The high initial strength facilitates fast trimming of the parts shortly after the press is opened.

The application technology for PU dispersions has been constantly developed further and today the adhesive is mostly applied in fully automated spraying and drying processes.

Jowat supplies a wide range of one- and two-component Jowapur® polyurethane dispersions fulfilling all requirements in the production of 3D furniture fronts.



Technical Information

Applications

The one- and two-component dispersion adhesives from the **Jowapur®** product series are used for laminating MDF carrier boards with thermoplastic PVC foils. The two-component dispersions **Jowapur® 151.50 + Jowat® 195.40** and **Jowapur® 154.30 + Jowat® 195.40** can additionally be used also to laminate MDF substrates with ABS and PET foils as well as PP materials.

Processing instructions

Adding the crosslinking agent: One-component **Jowapur®** dispersions do not necessarily have to be mixed with a crosslinking agent. The two-component dispersions from the **Jowapur®** series are mixed with 5 % – 10 % Crosslinking Agent **Jowat® 195.40** to achieve high resistances to heat and climatic influences. For the best bonding results, the mixing of the adhesive and the crosslinker has to be carried out with special care. The amount of crosslinking agent to be added to the adhesive depends on the materials to be laminated as well as on the requirements for the laminated product.

Adhesive application

- PU dispersions are applied by spraying, usually only on the carrier substrate.
- The surface of the MDF substrate has to be clean and free of dust.
- Double adhesive application on edges and routed areas -> higher adhesive absorption due to lower density of the middle layer.
- The first adhesive coating largely closes the pores (preliminary drying for 1 – 3 minutes).
- The second adhesive coating ensures a permanent bond.
- The adhesive application amount depends largely on the quality of the MDF and its porosity, and should not be below the following limits:
 - on the plain surface: 50 – 70 g/m² wet (20 – 30 g/m² dry)
 - on the edge and routed areas: 80 – 130 g/m² wet (35 – 55 g/m² dry)

The optimum processing temperature for the mixed components is 18 °C – 25 °C. Cold materials have to be conditioned for at least 24 hours at room temperature. We recommend that all materials coming into contact with the glue are made of high-quality stainless steel (German standard V2A or better) or of inert plastics, e.g. Teflon, PP, polyamide. Avoid contact with other metals like zinc, brass, copper or aluminium.

Cleaning

Machines and equipment may be cleaned after use with warm or cold water, using **Jowat® Cleaner Concentrate 192.40**. For more detailed cleaning instructions, please refer to the technical data sheet Cleaner Concentrate **Jowat® 192.40**.



Product overview

The following table provides an overview of our PU dispersions from the **Jowapur®** product series for the 3D lamination of furniture fronts. The portfolio provides products for all established lamination processes such as standard PVC foils, high-gloss PVC foils, ABS and PET foils as well as PP materials on MDF substrates. The table also provides an overview of the different applications and standard material combinations for the dispersions. For professional advice, please contact our Sales Representatives.

		1-COMP. STANDARD	1-COMP. "ALLROUNDER"	SMOOTH AND EVEN SURFACES	2-COMP. "ALLROUNDER"	2-COMP. LOW-COST	2-COMP. HIGHEST MOISTURE RESISTANCE
		Jowapur® 150.50/51	Jowapur® 150.90/91	Jowapur® 150.93	Jowapur® 151.50	Jowapur® 152.25	Jowapur® 154.30
Physical Data	Viscosity Brookfield [mPas]	approx. 3,000	approx. 3,000	approx. 3,000	approx. 1,750	approx. 600	approx. 1,750
	Solids content [%]	approx. 40	approx. 41	approx. 40	approx. 43	approx. 44	approx. 40
	pH value	approx. 8	approx. 8	approx. 8	approx. 8	approx. 5.5	approx. 8
Technical Data	Spraying	●●●	●●●	●●●	●●●	●●●	●●●
	Glueline temperature [°C]	≥ 60	≥ 55	≥ 55	≥ 60	≥ 60	≥ 60
	Appearance of the dry adhesive film (no crosslinker)	white opaque / white	white opaque / white	white opaque	white opaque	white / transparent	colourless
	Heat resistance	●●●	●●●	●●●	●●●	●●	●●●
	Applications	3D and flat lamination	3D and flat lamination	3D and flat lamination	3D and flat lamination	Flat lamination	3D and flat lamination
	Material mix	MDF / PVC foil	PVC, ABS, PET foils as well as PP materials	MDF / PVC foil	PVC, ABS, PET foils as well as PP materials	MDF / PVC foil and finish foil	PVC, ABS, PET foils as well as PP materials

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 of properties. No liability may be derived from these indications nor from the recommendations made by our technical advisory service. Customer trials are recommended. Please request an individual data sheet before processing and make sure to follow the instructions in it.

●●● very good ●● good

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