KLEIBERIT Products		Viskosity at 120°C	Viskosity at 140°C	Open time [min.]	Application methods	Advantages	Field of application
Flat lamination	**700.5**	6.000	3.000	2,5 min.	• Spray • Roller • Nozzle	• Distinctively tacky • Good wetting on difficult substrates	Polystyrene, wood and wood based materials, PVC, aluminium, metal sheeting
	705.1	18.000	9.000	>1 min.	• Spray • Roller • Nozzle	• Strong bonds/Suitable for slot nozzle, doctor blades, rollers • Low working temperature • High green strength	Veneer on wood based materials, Carpet on Baypreg®-boards, Car boot flooring
	706.0	12.000	6.000	4-6 min.	• Roller • Doctor blade • Nozzle	• Long open time • Very elastic • Suitable for slot nozzle, doctor blades, rollers	Microemission, universal PUR
	706.1	12.000	6.000	6-7 min.	• Spray • Roller • Nozzle	• Long open time • Strong bonds • Suitable for slot nozzle, doctor blades, rollers	Carton-honeycomb and porous materials
	706.2	10.000	5.000	10 min.	• Spray • Roller • Doctor blade	• High green strength • Long open time • Exceptional roller stability • Low odour • Minimal stringing	Thin laminates, low viscosity
	706.3	12.000	6.000	20 min.	• Spray • Roller • Doctor blade	• High green strength • Long open time • Exceptional roller stability • Low odour • Minimal stringing	Garage doors, sponges
	706.4	35.000	15.000	2-4 min.	• Spray • Roller • Doctor blade	• High green strength • High resistance to heat, cold, moisture • Long open time	Thick laminate, high viscosity
	706.5	16.000	8.000	2 min.	• Spray • Roller • Doctor blade	• High green strength • High wear resistance/ high creep resistance • Exceptional roller stability • Low odour • Minimal stringing	Foaming PUR for wood and porous materials
	706.6	12.000	6.000	2 min.	• Spray • Roller • Doctor blade	• Very high green strength • High wear resistance • High creep resistance • For the highest quality • High strength for memory effect	Door panels
	706.7	16.000	8.000	5 min.	• Spray • Roller • Doctor blade	• Strong bonds • Low working temperature • High green strength • High wear resistance/ high creep resistance	Sandwich elements with high temperature resistance
	706.8	16.000	8.000	2 min.	• Spray • Roller • Doctor blade	• Very high green strength • High wear resistance/ high creep resistance • Exceptional roller stability • Low odour • Minimal stringing	Fast curing 706.5, i.e. for sponges
	706.9	30.000	20.000	3-4 min.	• Roller • Nozzle	• Extremely high green strength under temperature stress • Excellent stability • High strength for memory effect	Honeycomb and thick laminates, high viscosity
	708.1	14.000	7.000	2 min.	• Spray • Roller	• Very low applicatin temperature • Very high green strength • Distinctively tacky	Chromatised/anodised aluminium profiles with PVC foils Excellent PVC-Adhesion
	709.1	11.000	5.000	6-7 min.	• Roller • Spray	• Long open time • High green strength	Metal
	709.3	8.000	3.000	4 min.	• Spray • Roller	• Low working temperature • Very high green strength • homogeneous application • Exceptional roller stability	High gloss < 0,7 mm
	709.4	8.000	4.000	3-4 min.	• Spray • Roller	• Low working temperature • Very high green strength • homogeneous application • Exceptional roller stability	High gloss > 0,7 mm

Machine Manufactures

BARBERAN S.A.
Pol. Ind.°CAMI RAL°C/Galileo 3-9
CASTELLDEFELS (Spain)
www.baraberan.com

BLACK BROS. Co.
501 Ninth Avenue
Mendota, Illinois 61342 (USA)
www.blackbros.com

ROBERT BÜRKLE GmbH
Stuttgarter Str. 123
72250 Freudenstadt (Germany)
www.buerkle-gmbh.de

FRIZ Kaschiertechnik
Im Holderbusch 7
74189 Weinsberg (Germany)
www.friz.de

HARDO Maschinenbau GmbH
Grüner Sand 78
32107 Bad Salzuflen (Germany)
www.hardo-gmbh.de

HYMMEN GmbH
Theodor-Hymmen-Strasse 3
33613 Bielefeld (Germany)
www.hymmen.com

OMMA
Via Dell'Artigianato 13/11
20051 Limbiate (Milano - Italy)
www.omma.com

OSAMA Technologies srl
Via della Pergola, 11
Località Canonica (Steccaia)
53037 San Gimignano SI
www.osama-tech.it

SIMIMPIANTI S.R.L.
Woodworking Machinery
Via Romilli, 31
20139 Milano (Italy)
www.simimpianti.it

TORWEGGE
Holzbearbeitungsmaschinen GmbH
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32584 Löhne (Germany)
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01/10 _Lam2

Flat Lamination

ROLLER AND SLOT NOZZLE APPLICATION

The New Age of Flat Lamination

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FLATLAMINATION

Flat Lamination

ROLLER AND SLOT NOZZLE APPLICATION

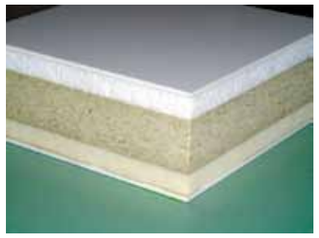
Flat Lamination

The lamination of flat surfaces with foils, veneers, or papers using thermo laminating or cold laminating equipment is a tried and tested process in the wood working industry.
These processes predominantly use EVA hot melts and PVAC adhesives. Here the final bond strength is achieved purely by physical cross-linking, firstly through the cooling of the thermo plastic hot melt adhesive and secondly by the absorption of the water contained in PVAC adhesives.

Contrary to this, the use of PUR hot melts applied with rollers or slot nozzle, are relatively new applications. These processes require new generation PUR hot melts which provide long open time, high green strength and a high final bond strength.
What all PUR hot melts have in common is that in addition to the physical cross-linking of the adhesive, they also cross-link chemically. In comparison with EVA and PVAC adhesives this has the advantage of a significantly higher temperature and moisture resistance.

These higher bond strengths have made it possible to explore new end user applications. This has enabled the technology of roller and slot nozzle application to develop rapidly.
Roller applicators are predominantly in use in bonding large areas and less flexible materials. A typical example is all types of multi layer sandwich elements.

Flat laminating of large areas such as chipboard with more flexible materials such as foils and papers can be done using wide slot nozzles.

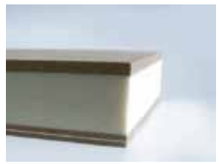


For specialist applications either roller or slot nozzle applicators can be used. For example, double roller applicators in the textile industry or for the fleece backing of veneers.

Application

The application temperature of reactive PUR hot melts is usually between + 120 °C and + 140 °C.
The PUR HM is melted in its original delivery container using special equipment and is then pumped through heated pipes to the application roller. The adhesive is applied to the substrate via direct contact with the application roller.

The covering substrate is then either applied by hand or machine and the required pressure is applied via the press rollers. This process is mainly used for very large areas using rigid materials.



Application

With slot nozzle systems the adhesive is usually applied to the flexible rolled up material and the online pressing is done immediately afterwards via large area calendars.

The maximum line speed is max. 80 m/min.

Flat Lamination to different materials

Cleaning

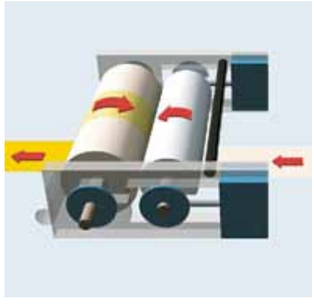
After completion of work the application rollers have to be cleaned completely with **KLEIBERIT Cleaner 761.8** or **761.5**. Remaining hot melt in pipes and melting vessels should be kept under air and humidity tight condition.

Slot nozzle openings can be sealed airtight and therefore remaining hot melt can be left inside the system. Any other remaining PUR hot melt should be cleaned off with **KLEIBERIT Cleaner 761.7**.

PUR hot melt, which is left to cross-link can only be removed mechanically.

Advantages

- Suitable for high bond strength requirements
- Excellent temperature resistance
- High moisture and water resistance
- Simple application using roller and slot nozzle
- Flexible glue joint
- Adhesion to many different materials



With **product group 706**, **KLEIBERIT** offers multiple application-oriented products.

KLEIBERIT 706 is established in the market as a successful, universal PUR surface adhesive with a wide bond spectrum.

KLEIBERIT 706.2 shows especially good wetting on hard to bond substrates.

KLEIBERIT 706.5/8 or 706.6 can be used for applications with high memory effect.
The combination of good processing characteristics like smooth application texture, string free and roller stability is convincing.

706.9 is a product for bonding materials with high memory effect at high temperatures. Tolerances which often occur in the production of framed honeycomb panels are securely covered.

Numerous market requirements of particular types can be solved with **KLEIBERIT** flat lamination adhesives. Special products have the following characteristics:
- Fire retardant
- UV stable
- High temperature resistance

This is only a small extract from the comprehensive **KLEIBERIT** product range for flat lamination.
Realize innovation through working together with **KLEIBERIT**.

Storage

PUR-HM can be stored in factory sealed containers for approx. 6-12 months. For detailed information, see technical data sheet

Disposal information

Cross-linked PUR hot melt can be disposed of with the normal waste disposal. In addition to this, our packag- ing materials are suitable for recycling and can, once emptied sufficiantly, be put through the appropriate recycling channels.

COMPETENCE PUR
KLEIBERIT®