KLEIBERIT®
ADHESIVES • COATINGS

Surface Finishing

HotCoating roll material

Competence PUR

KLEIBERIT®
ADHESIVES • COATINGS

KLEBCHEMIE M. G. Becker GmbH & Co. KG, producer of **KLEIBERIT** products – modern and innovative. The company's competence is especially reflected in the tremendous development and productivity in PUR-adhesives, which is why **KLEIBERIT** products have become market leaders in this future technology sector – worldwide!

In our modern laboratories, experienced, innovative and highly qualified chemists develop high quality products in accordance to customer requirements. Emphasis is placed on the development of environmentally friendly and ecologically clean adhesives.

Our applications laboratory has an extensive range of machinery, so our skilled technicians and engineers are able to conduct tests under "real life" conditions.

The combination of our inbound quality control, production quality control and constant product development ensures that our customers will only receive quality products.

KLEIBERIT products are being used worldwide by many well known companies in the woodworking, plastics and automotive industries.

Modern
Technology,
Know-how,
Commitment...

... are the components that determine success – today and in the future.

- PUR-Adhesive: One and two components
- PUR-Hotmelts, PUR-Glue
- Dispersions: PUR, EVA, PVAC
- Hotmelts: PUR, EVA, PO, PA, PE
- Two component PUR and Epoxy Systems
- Foams and Sealing Compounds
- Solvent based Adhesives

... we hold the world together

Working internally and in the field, our highly motivated employees always provide the best customer service through excellent customer care, high quality technical assistance, fast order processing, and quick, worldwide delivery.

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KLEIBERIT®
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Veneer / Fleece Laminating

KLEIBERIT PUR-HM 702
Glue joint
- Water free
- Higher flexibility
- Higher water and temperature resistance
- No veneer discolouration

Production cost
- Increased line speeds up to 100 m/min
- Machine can also be used for multi-layer veneer
- Low coat weights to 35 g/m²

Compatibility
- PUR is compatible with EVA and PO hot melts

Multi-layer Veneer

KLEIBERIT PUR-HM 702
Glue joint
- Water free
- Higher flexibility
- Higher water and temperature resistance
- No veneer discolouration
- High green strength

Production cost
- Increased line speeds up to 25-80 m/min
- Energy savings – no pre-heating or heated press rolls are needed
- One-sided adhesive application

KLEIBERIT HotCoating®

Surface Refinement of Veneer/Paper Fleece Laminating

HotCoating is the process in which **KLEIBERIT PUR HC 717** is applied to the surface. Even with low coat weight, the coating has high wear resistance and shock resistance. The coat weight and the degree of gloss can be adjusted to customer requirements.

The **KLEIBERIT HotCoating**® process is not only uncomplicated and easy to operate, there are also no VOC or formaldehyde emissions.

HotCoating – this process offers a wide variety of advantages:

- Singular application
- No interim sanding
- 100 % solids
- Smaller production areas
- Lower capital expenditure
- Reliable production
- Variable
- High scratch resistance (> AC5)

INFORMATION

With **KLEIBERIT PUR HC 717**, the company KLEBCHEMIE developed a new technological process which:

- revolutionises surface sealing
- achieves a surface which enhances the natural optic and haptic of solid wood
- significantly simplifies the complete process

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KLEIBERIT HotCoating®...

The alternative to laquering ...

HotCoating of Veneer / Paper

Up to now...

Continuous veneer is produced from finger jointed veneer. Fleece backed roll material is being used in the furniture industry for the wrapping of profiles and similar items.

After wrapping, **further processing steps** are required to complete the surface effect:

- Sanding of the profile
- Base coating of the profile
- Sanding of the profile
- Sealing / lacquering

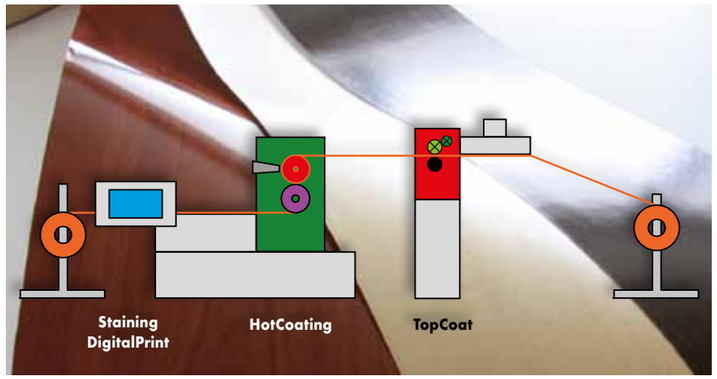
Complex and difficult profiles require either expensive multi axle machinery or have to be produced by hand.

Using HotCoating technology, a product is "ready to sell"after wrapping, without requiring further processing.

From today...

The **KLEIBERIT HotCoating®** technology, which seals the veneer surface in only one work process, is based on a PUR coating of the surface and has these advantages:

- Good flexibility after curing
- High UV stability
- Very high scratch resistance
- Suitable for tight wrapping radiuses



The unique advantage of this technology is:

Only 1 work process

- No sanding of the profile
- 100% solid content
- Low capital expenditure for machinery
- Multi functional application system i.e. a combination with fleece lamination or veneer doubling

Application

HC 717 is applied onto roll material with a special slot nozzle which creates a very smooth and streak-free film. Beforehand, the desired pattern or colouring can be applied through inline staining or printing processes. After application of the UV hardening topcoat, the roll material can be immediately wound and is ready for further processing.

The end product is veneer or paper with a finished, refined surface which distinguishes itself through extraordinary flexibility. Complex **profiles with tight radiuses can be wrapped without problems** and are afterwards "ready to sell".

Product	Application	Basis	Viscosity [mPas] at 120° C at 140° C	Application temperature	Coat weight	Colour	Properties
PUR HC 717.0	Veneer/Paper	PUR	30.000 15.000	100°C - 140°C	25-100 g/m²	transparent	• high flexibility • UV resistant
PUR HC 717.5	Veneer/Paper	PUR	16.000 8.000	100°C - 140°C	60-100 g/m²	transparent	• high abrasion resistance • up to > AC5 according to EN 13 329 • contains corundum
UV TopCoat 659	Topcoat	Acrylate	20 s (6 mm DIN cup)	20 - 30°C	5-15 g/m²	transparent	• various gloss settings

Decorative Surfaces/Digital Print

In profile wrapping, diverse decorative papers and foils are being used in addition to real wood veneer.

The first trends and imminent future use of printing technology shows individual and creative design which can also be realized with smaller lot sizes.

KLEIBERIT HotCoating® offers many possible combinations in laminating and printing technology.

The very good bonding properties of **PUR HC 717** to paper, print colours and lacquer systems allows for the use as protective refinement or as the sealing basis for printing.

KLEIBERIT HotCoating for Exterior Applications

The expert opinion regarding exterior coatings is clear - the number 1 characteristic required before anything else is:

FLEXIBILITY!

HotCoating boasts flexibility which is far from conventional coating systems and furthermore offers very good weathering protection.

Very high water resistance and excellent adhesion in a wet state predestine HC as the protective layer for dimensionally stable building components.

With this technology, window systems, plywood or facade elements have a surface which maintains its protective function even with swelling, shrinking and mechanical stress. Decorative colouring and combinations with conventional staining or lacquering technology is also possible.

A nearly perfect combination shows building components which are pre-treated with **KLEIBERIT PUR 555** and **KLEIBERIT HC 717**.

KLEIBERIT PUR 555 is a reactive PUR system which deeply penetrates components and has excellent properties for reinforcing softwood, repelling water and as a flame retardant.
When a surface is coated with **HC 717** after pre-treating, it is an extremely weather stable component with a refined surfacesuitable for exterior weathering.

KLEIBERIT PUR 717
KLEIBERIT PUR 555nano

HotCoating
High Abrasion Resistance and Flexible

KLEBCHEMIE has further developed the innovative HotCoating technology. The industry can now use a HotCoating coating with the highest abrasion resistance reaching the highest abrasion class (>AC5) according to DIN EN 13329. It is still applied in one simple step with uncomplicated application technology.
Users can now, on their own, produce highly scratch resistant paper or veneer which is very processable. The characteristics open new possibilities in the market:

- Flooring
- Transition Profiles
- Mouldings
- Window Sills

KLEIBERIT®
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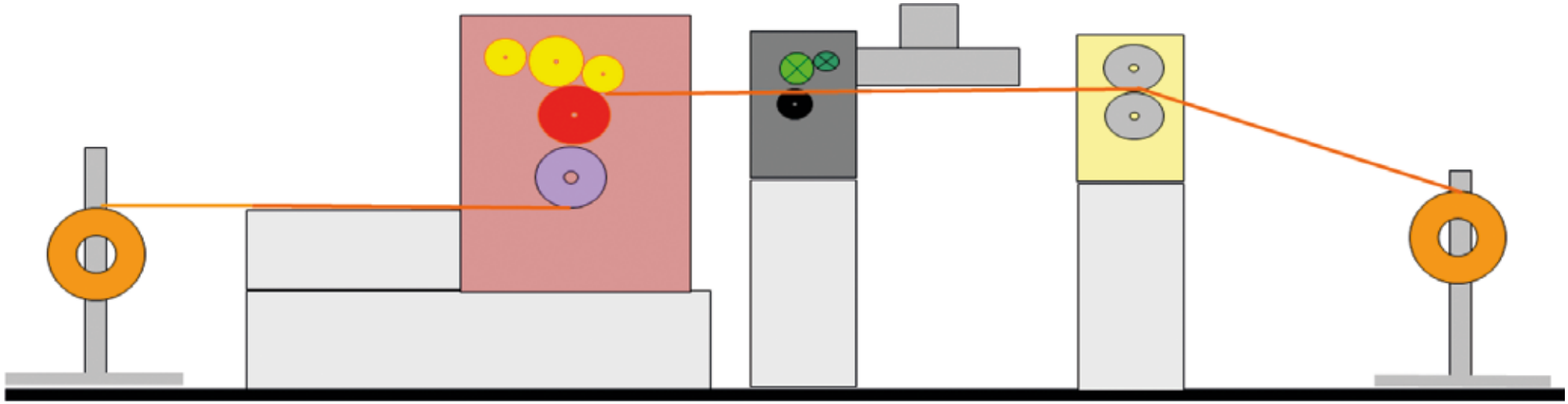
KLEIBERIT HotCoating® roller application

Inline-embossing



1. *Unwinding*
   paper
   foil
   veneer

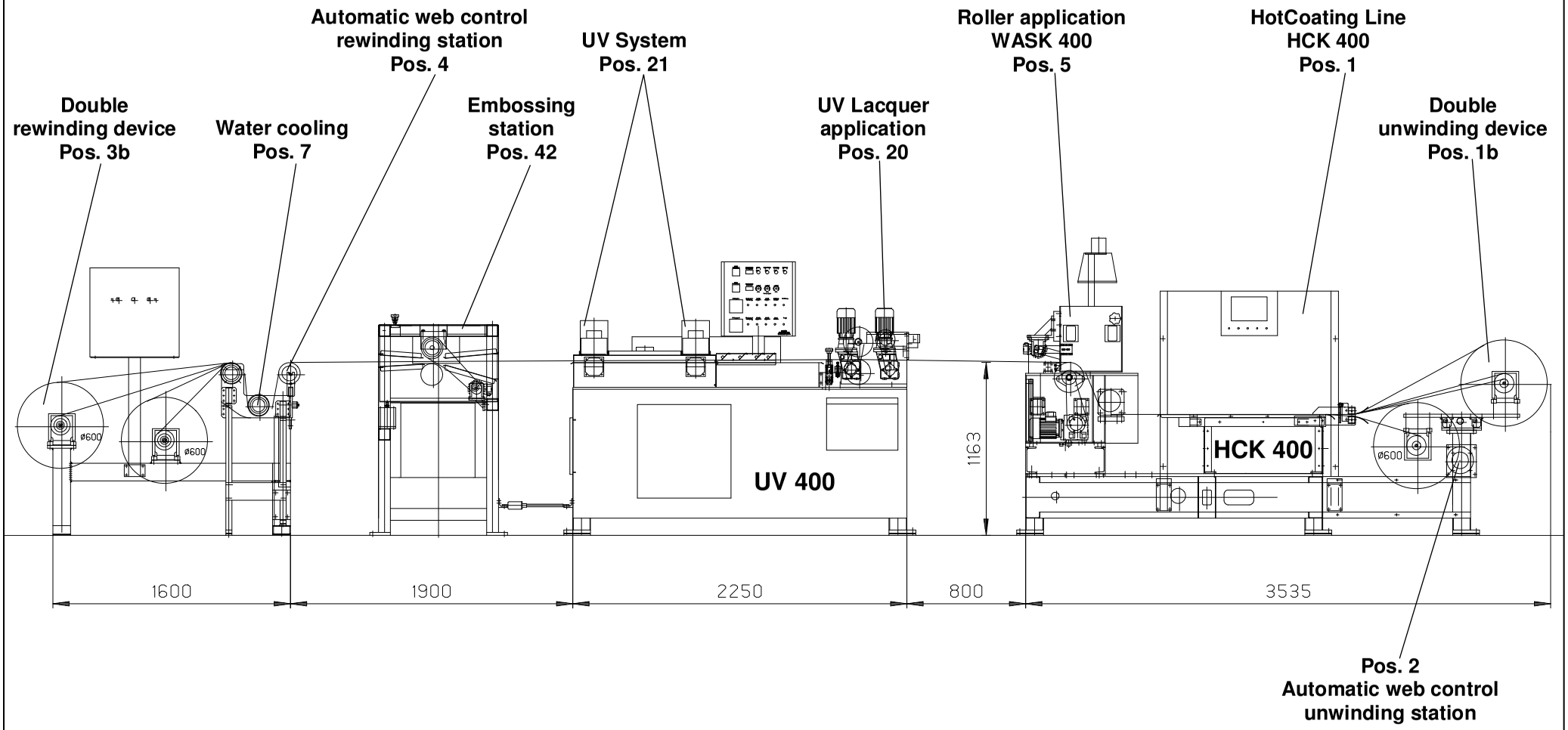
2. *KLEIBERIT Hot-Coating application*

3. *KLEIBERIT UV TopCoat application*

4. *Inline Embossing*

5. *Rewinding*

HUSER - HotCoating Line



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(German Accreditation System of Testing) acc. to DIN EN ISO/IEC 17025

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TEST CERTIFICATE

ST-09-01-16-01

Product: PDL-floorings with surfaces of ***„Kleiberit HotCoating VP 9383/323“*** named by the producer with variant A and B (surface coating system according to the producer instruction)

Producer: Klebchemie
M.G. Becker GmbH & Co. KG
Max-Becker-Str. 4
76356 Weingarten

Order / Test method: Determination of the resistance against abrasion according to EN 15468 / EN 13329 annex F

Test report: 278324 / part 1

Test result:

Variant	Average number of revolutions until the IP value according to EN 13329 (n = 2)	Average layer thickness in µm
A	2000	62
B	5000	80

n = number of test pieces

Dresden, 16.01.2009

Head of laboratory

Institute of Wood Technology · eph · QUALITY PROVEN · Dresden gGmbH

Engineer in charge

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The wear resistance class can be simply adjusted by the coat weight