HotCoating roll material
**Competence PUR**

**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.

- 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

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

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... we hold the world together

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KLEIBERIT HotCoating®
Surface Refinement of Veneer/Paper Fleece Laminating

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

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

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• Water free
• Higher flexibility
• Higher water and temperature resistance
• No veneer discoloration
• High green strength

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 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 (> ACS)
The alternative to laquering...

**KLEIBERIT HotCoating®...**

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 in a combination with fleece lamination or veneer doubling

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

**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.

**From today...**

The KLEIBERIT HotCoating® technology, which seals the veneer surface in only one work process, is based on a PUR coating at the surface and has these advantages:
- Good flexibility after curing
- High-UV stability
- Very high scratch resistance
- Suitable for tight wrapping radii

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.

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 / facaturing

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

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

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

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 expert opinion regarding exterior coatings is clear – the number 1 characteristic required before anything else is **FLEXIBILITY!**

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-heating, it is an extremely weather stable component with a refined surface suitable for exterior weathering.

**KLEIBERIT HotCoating for Exterior Applications**

**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 (MC5) 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

**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 predetermines 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.
1. Unwinding paper foil veneer
2. KLEBERIT Hot-Coating application
3. KLEBERIT UV TopCoat application
4. Inline Embossing
5. Rewinding

KLEBERIT HotCoating® roller application
Inline-embossing
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:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Average number of revolutions until the IP value according to EN 13329 (n = 2)</th>
<th>Average layer thickness in µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2000</td>
<td>62</td>
</tr>
<tr>
<td>B</td>
<td>5000</td>
<td>80</td>
</tr>
</tbody>
</table>

n = number of test pieces

Dresden, 16.01.2009

[Signatures of Head of laboratory and Engineer in charge]
The wear resistance class can be simply adjusted by the coat weight.