

# INTRODUCING VINNAPAS® DPX 271: A NEW TECHNOLOGY FOR NON-DISCOLORING, LOW-FORMALDEHYDE D3 WOOD GLUES

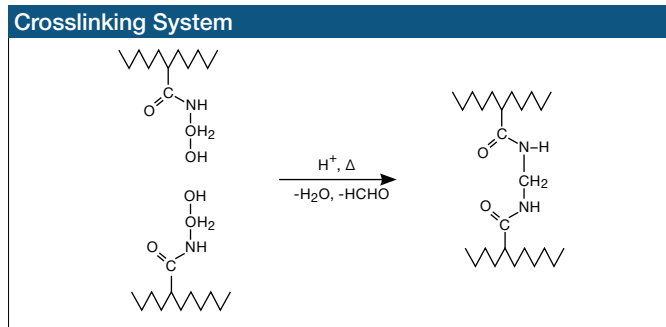
Waterborne wood adhesives are based on PVAc dispersions as binders. With traditional PVAc dispersions, D3-level adhesives can only be formulated via reactive co-monomers as crosslinkers. For D4-level adhesives, additional external crosslinkers are required. Today, this technology faces various challenges:

- 2K systems are increasingly seen as cost-drivers in the production process because they make handling complicated
- EHS concerns and ecological awareness are becoming an issue not only philosophically, but legally
- The use of crosslinkers leads to discoloration of sensitive woods.

With the new DPX technology, WACKER has introduced a new generation of PVAc dispersions for the formulation of crosslinker-free D3 wood glues.

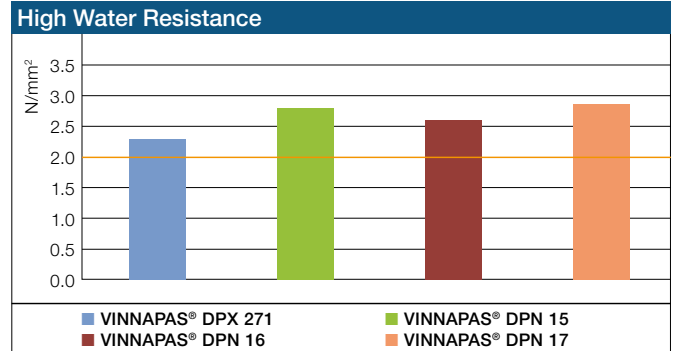
### Negative Influence of Crosslinkers

With traditional PVAc binders, a crosslinking reaction, is necessary for water-resistant wood glues. For this reaction, an acid environment is required that leads to discoloration of sensitive woods. Also, formaldehyde is emitted upon crosslinking.

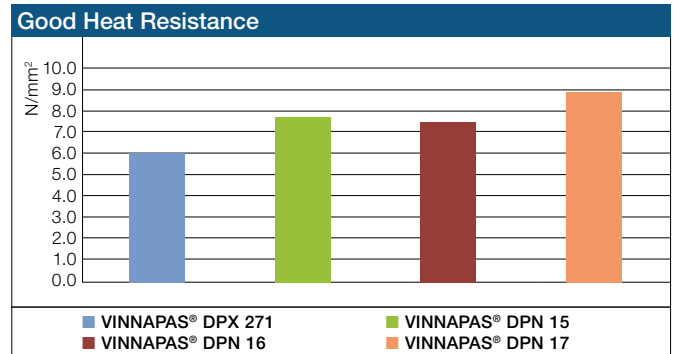


### VINNAPAS® DPX: the Technology for Crosslinker-Free Systems

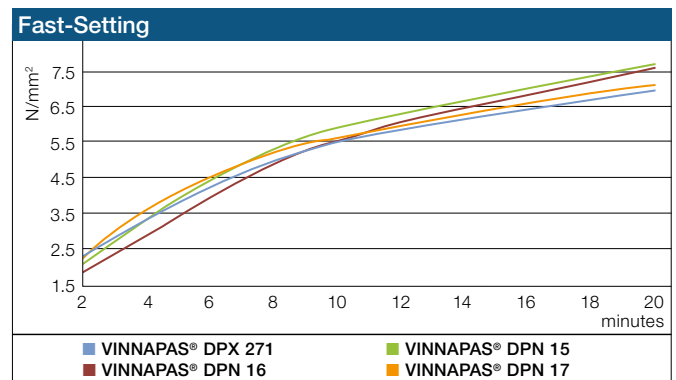
The new VINNAPAS® DPX 271 is a PVAc binder that enables you to avoid these problems. With VINNAPAS® DPX 271, it is now possible to formulate D3 water-resistant adhesives without crosslinkers. The adhesives come as a 1K system with convincing technical properties:



Water resistant according to EN 204 for D3 strain group



Heat resistant according to WATT 91



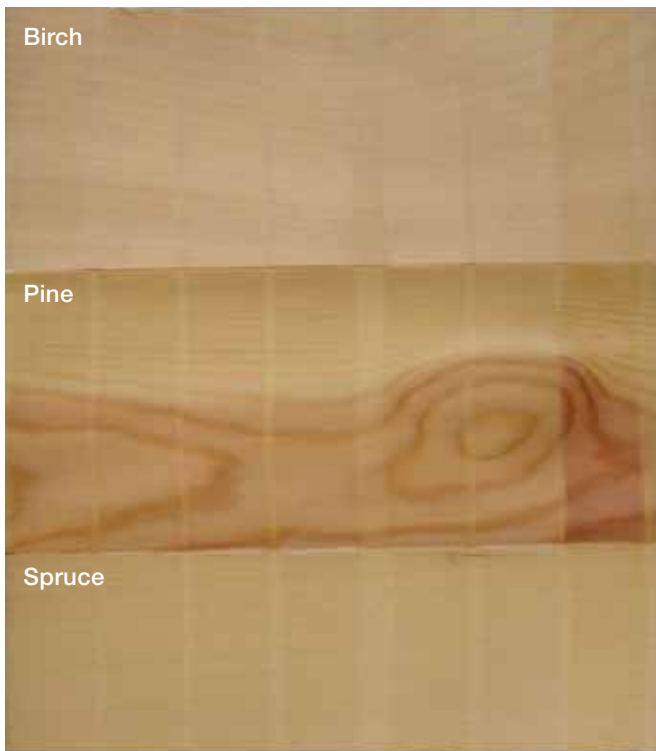
VINNAPAS® DPX 271 shows fast-setting, comparable to VINNAPAS® DPN 15

**Very Low Formaldehyde Content**

In the current technology, high-quality products like the VINNAPAS® DPN grades have formaldehyde values typically well above 200 ppm of free formaldehyde. Reaction with the crosslinkers emits additional formaldehyde. VINNAPAS® DPX 271 has a value typically well below 20 ppm. Due to the absence of crosslinkers, VINNAPAS® DPX 271 enables the formulation of wood glue adhesives with very low formaldehyde content.

**No Discoloration**

Even notoriously sensitive woods show no discoloration upon contact with VINNAPAS® DPX.



Comparison of six different lots of VINNAPAS® DPX 271 to a standard D3 wood glue with aluminum chloride as crosslinker, showing the effect on discoloration.

**Formulation Differences between VINNAPAS® DPX 271 and VINNAPAS® DPN Grades**

As a 1K system, the new VINNAPAS® DPX grades are significantly easier to handle and process. Also, the dispersion shows a high tolerance to alkaline fillers due to its neutral pH. Another difference is the lack of freeze-thaw resistance which should be taken into account during transport and storage. At temperatures below 12°C, a reversible viscosity increase can occur.

**AT A GLANCE:  
PROPERTIES OF THE NEW VINNAPAS® DPX  
PRODUCT LINE**

- Water resistance: D3 (EN 204)
- Good heat resistance (WATT 91)
- Fast-setting
- No crosslinking required
- pH value of approx. 5
- Enables the formulation of wood glue adhesives with very low formaldehyde content
- Discoloration-free
- High tolerance to fillers – while still achieving D3

The combination of these properties makes VINNAPAS® PVAc homopolymers the technology of choice in wood adhesives.

To find your WACKER contact, please visit:  
[www.wacker.com/salescontact](http://www.wacker.com/salescontact)

To find out more about VINNAPAS® DPX 271, please visit:  
[www.wacker.com/wood](http://www.wacker.com/wood)