

# SOYAD™ HPW ADHESIVES

The natural choice for hardwood plywood



- No-added-formaldehyde (NAF) Adhesive
- Highest Bio-based Content
- Cost Competitive with Urea Formaldehyde
- Excellent Bond Strength and Fiber Tear
- EPA and CARB Phase 2 Exempt

## Technology Overview

Soyad™ HPW adhesive technology is a patented, no-added formaldehyde (NAF) adhesive system from Solenis that is used to manufacture environmentally-friendly hardwood plywood panels. These adhesives are used to produce panels with veneer, particleboard or medium-density fiberboard cores. Soyad HPW adhesives are water-based systems formulated with natural soy flour and a proprietary amine-based resin. When blended together the resin reacts with the protein in the soy flour to form a durable and water-resistant thermoset adhesive.



## Process Parameters

When converting from a formaldehyde-based adhesive to a Soyad HPW adhesive, some mixing system changes are usually required. However, Soyad HPW adhesives are easily applied using the same spreaders typically used for formaldehyde-based adhesives and spread rates, press temperatures and press times are similar to those of formaldehyde based adhesives.

Compared to other adhesives, Soyad HPW adhesives have a longer pot life, which reduces the risk of the adhesive hardening in process piping. Other comparisons are shown in Table 1.

Table 1

ADHESIVE & PROCESS	SOYAD HPW	1ST GEN SOYAD	UF	PVAc
Resistant to Bleed-through	●	○	●	●
Excellent Tack	●	○	●	●
Long Stand Time	●	●	●	●
Long Glue Pot Life	●	●	●	●
Operator Friendly	●	●	●	●

Better ● ● ○ ● ● Worse



## Performance Advantages

Commercial applications have demonstrated that Soyad HPW adhesives provide better performance than first-generation Soyad systems and are a competitive alternative to UF adhesives (see Table 2). Consider the following:

- Cost competitive with formaldehyde-based adhesives and other NAF technologies.
- Provides excellent knifing results and 3-cycle soak performance.
- Bonds well to difficult veneers such as Maple, Douglas Fir and Pine.

Table 2

COST & BOARD PROPERTIES	SOYAD HPW	1ST GEN SOYAD	UF	PVAc
Knifing - High % Fiber Tear	●	○	●	●
Low-cost Adhesive	●	●	●	●
No Added Formaldehyde	●	●	●	●
High Bio-Based Content	●	●	●	●

## Formaldehyde Emission Standards

Hardwood plywood panels made with Soyad HPW adhesives meet all global formaldehyde emission standards, including EPA 40 CFR Part 770, CARB Phase 2, European E0 and Japanese F★★★★ standards. Also, hardwood plywood panels produced with Soyad Plus adhesives qualify for “Exempt” status with both the EPA and CARB. EPA-Exempt means users will qualify for reduced testing and will have a significantly reduced risk of producing non-complying lots requiring 72 hour customer notification.

## More Information

To learn more, contact your local Solenis field representative or visit us online at [soyad.com](http://soyad.com)

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