

SOYAD™ EWF ADHESIVES

The natural choice for engineered wood flooring



- 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™ EWF adhesive technology is a patented, no-added formaldehyde (NAF) adhesive system from Solenis that is used to manufacture environmentally-friendly engineered wood flooring. These adhesives are used to produce flooring with veneer or high-density fiberboard cores. Soyad EWF adhesives are water-based systems formulated with natural soy flour, a proprietary amine-based resin and a water dispersible aliphatic isocyanate (wHDI) crosslinker. When blended together the resin and crosslinker react with the protein in the soy flour to form a durable and water-resistant thermoset adhesive. The wHDI crosslinker significantly boosts adhesion and allows for deeper penetration of the glue into the wood veneers.



Process Parameters

When converting from a formaldehyde-based adhesive to a Soyad EWF adhesive, some mixing system changes are usually required. However, Soyad EWF 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 EWF 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 EWF | 1ST GEN SOYAD | UF | PVAc |
|--------------------|-----------|---------------|----|------|
| Excellent Tack | ● | ○ | ● | ◐ |
| Long Stand Time | ◐ | ◐ | ● | ◐ |
| Long Glue Pot Life | ◐ | ◐ | ◐ | ● |
| Operator Friendly | ● | ● | ● | ● |

Better ● ◐ ○ ◑ ◒ Worse



Performance Advantages

Commercial applications have demonstrated that Soyad EWF adhesives provide a number of performance advantages (see Table 2) for flooring manufacturers. 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 and Hickory.

Table 2

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

Formaldehyde Emission Standards

Engineered wood flooring made with Soyad EWF adhesives meet all global formaldehyde emission standards, including EPA 40 CFR Part 770, CARB Phase 2, European E0 and Japanese F★★★★ standards. Also, flooring produced with Soyad EWF 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

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