



Soy-based Adhesive Enables Particleboard Manufacturer to Produce No-added Formaldehyde (NAF) Panels

Soyad™ CL5440 Adhesive Technology

Customer Overview:

- Segment: Wood Composite Panels
- Product(s): Particleboard
- Location: North America

Application Overview:

- Type: Wood adhesive
- Equipment: 8 foot wide caul-less particleboard line with single opening press.
- Capacity: 150 million square feet per year

Existing Treatment:

- Face: 12.5% phenol formaldehyde (PF)
- Core: 9.0% phenol formaldehyde (PF)

Problem Summary:

Due to growing demand in the North American market for a no-added formaldehyde (NAF) panel, this large particleboard producer wanted to replace its existing low-emitting, phenol-formaldehyde (PF) adhesive. The plant wanted the replacement adhesive to be cost effective, run through its existing process and allow for the production of quality NAF panels.

Customer Objectives:

- Maintain or reduce adhesive costs
- Maintain or improve M2 board properties
- Maintain or increase production rates
- Meet regulations to qualify as a non-formaldehyde panel

Solenis Solution:

The Solenis team surveyed the plant's process and recommended the use of Soyad CL5440 adhesive technology in combination with dry soy flour and an internal release aid.

Soyad adhesive technology is a patented, formaldehyde-free adhesive system from Solenis that is used to manufacture environmentally-friendly particleboard panels.

Both the face and the core were converted to the Soyad technology and bulk tanks and dry flour feed systems were installed into the process.

Customer Benefits:

- The plant was able to produce cost-competitive, NAF panels while meeting its adhesive cost and strength objectives.
- Press factors were reduced by 21%, allowing for an increase in production speeds.
- The panels were classified as "Exempt" by the State of California (CARB) and met the requirements for all LEED regulations.

Conclusion:

Soyad CL5440 adhesive technology enabled this particleboard manufacturer to launch a cost-competitive, NAF panel into the market. This provided the customer with a competitive edge.

Test	ANSI A208.1-2009 M2 Standard		Results with Soyad	
	Metric	USA	Metric	USA
MOR	13.0 N/mm ²	1885 psi	13.7 N/mm ²	1987 psi
IB	0.4 N/mm ²	58 psi	0.59 N/mm ²	85 psi