

***Madison Pre-Hung Doors
and Pre-Finishing Case Study***
Oregon, Wisconsin

The company switched from solvent-based to water-based finishes in both manual and automated spray applications of the wood products. VOC's were reduced from 115 tons/year to six tons/year while nearly doubling production.

Madison Pre-Hung Doors and Pre-Finishing experienced cost savings through reduced insurance premium costs, savings from avoiding purchasing an after-burner and elimination of waste disposal costs.

The major challenge lay in achieving a comparable quality to that of a solvent-based finish. The water-based finish was refined as they worked with their paint supplier.

Source: "Madison Pre-Hung Doors and Pre-Finishing Converting to a Water-based Wood Finish," Wisconsin Department of Natural Resources, 1995.

The Shutterry of Nanik Case Study
Wausau, Wisconsin

The finishing and sanding departments of Shutterry of Nanik converted from solvent to waterborne coatings. Wood components are fogged with a primer, sanded twice and top-coated with the waterborne coatings.

As a result, the air emissions for this operation changed from a permitted air source to an exempt air pollution source. Hazardous Waste Generator status moved from Large to Very Small Quantity Generator (VSQG or conditionally-exempt).

While the custom-made shutter drying oven initially cost \$70,000, the company saved \$32,600 the first year from reduced or eliminated safety/DNR compliance programs and \$13,000/year after for reduced administrative work.

Source: "The Shutterry Of Nanik: Conversion from solvent to waterborne coatings for wood finishing," Wisconsin Department of Natural Resources, 1995

- ! clean equipment with soap and water (in some cases)
- ! potential reduction in fire insurance when converting from solvent coatings to waterborne
- ! reduce toxicity and odor (in some cases)

Cautions

- ! increase drying times, larger drying air requirements or higher oven temperatures as water takes more time than VOCs to evaporate, especially in high humidity
- ! store at room temperature for proper solubility and freeze protection
- ! clean equipment immediately after use (in some cases)
- ! use corrosion resistant equipment; costs of conversion can be significant
- ! control moisture content of substrate and finish room humidity
- ! raising of wood grain possible
- ! wood surface must be free of oils and dust for good adherence properties
- ! high gloss finish sometimes difficult to obtain; increased rubbing effort needed
- ! some atomization difficulties, increased runs and sags, tendency to foam
- ! refinishing is sometimes difficult