

# *Zeroing on BMP's Through Process Modifications*



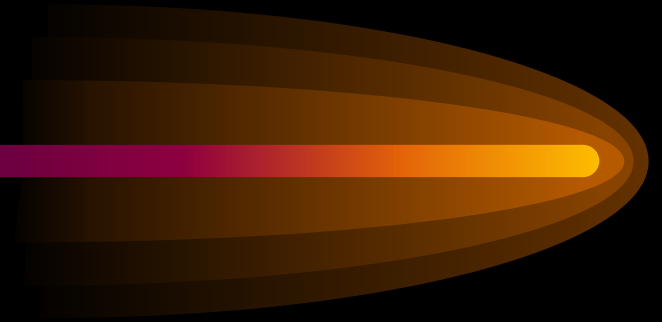
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# *Zeroing on BMP's Through Process Modifications*




- Overview of Best Management Practice (BMP)
- The Process
- Operations involving modification
- New Products / New Thinking
- Summary and Recommendations

# *BMP Concept*



- Maximize Performance
- Minimize Cost
- Improve Quality
- Continue to Evaluate and Modify

# *Treated Wood BMP*

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- History of treated wood use
  - Growing environmental awareness
  - Aquatic applications were highest risk
  - WWPI & CITW Guidelines
  - Minimize migration and leaching

# *Treated Wood BMP Key Factors*



- Reduce potential preservative loss
- Reduce surface residues
- Minimize over-treatment of product
- Encourage waterborne chemical fixation
- Expanding interest and use of BMP's

# *Treated Wood “Fit” to BMP*




- Environmental Concerns in new areas
  - Over water
  - Sensitive environments
- Minimize preservative migration and leaching
- Aquatic Risk Assessment Models developed
- Quality Assurance Program
- Prevented non-wood alternatives in some applications

# *Process Modifications*



- Webster defines process as:
  1. gradual changes leading to a particular result
  2. A series of actions or operations conducing to an end
- especially a continuous operation or treatment in manufacture

# *Wood Treating Process*

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- Is not limited only to the treating cycle
  - The “process” is a collection of single actions
  - Some actions interact and are dependent on others
  - Consider all various factors for BMP products

# *Process Fundamentals in Treating*



- Procurement
- Pre-treatment preparation or fabrication
- Seasoning and conditioning
- Material handling
- Chemical treatment
- Post-treatment conditioning & fixation

# *Procurement Modifications*



- Typically under less control by the treater
- Source of material can be significant
  - geographical regions
  - climatic conditions
- Material preparation

# *Material preparation Modifications*



- kiln drying concerns
- application of anti-sapstain chemicals
- partial seasoning
- communicate importance of these areas with the material supplier

# *Pre-treatment fabrication*



- Product & species specific
- incising, framing, cutting, drilling, etc.
- enhances performance
- improves durability
- environmentally conscious
  - reduces construction fabrication
  - minimizes the field use of preservatives

# *Wood Treater's Perspective*



- Encourage any BMP design to include pre-treatment fabrication
- Clean material of sawdust and drilling debris
- Improvements of incising equipment
  - reduced drying or conditioning time
  - improved treatability
  - more consistent treatment
  - reduced press times

# *Material Handling Modifications*



- Wood and preservative  
challenge of clean work solution  
covered inventory / wrapped units  
cleaning using high pressure water / air  
pavement of the facility

# *Material Handling Modifications*



- Loading material
  - design of tram cars
  - stacking on trams (blocks or orientation)
  - separation with stickers
    - aids in circulation
    - improves efficiency of vacuum
    - prevents dead spaces on wood interface

# *Material Handling Modifications*



- Preservative Solution turnover / adding fresh reduces residue on surface  
oil-type preservatives darken w/ age
- Filtration systems in oil-type and waterborne preservatives
- coordination of materials received  
treat BMP only with fresh solution

# *Chemical Treatment Modifications*



- No details for cycle - too many variables
- In-plant technology improvements
  - computerized plant controls, air activated valves, electronic metering and tracking systems
  - closely follow and control the operation

# *Treating Modifications*

- dedicated retorts for steam conditioning
  - improves efficiency
  - reduces wood extractives in solution
  - reduces cost of water treatment
- Post-conditioning
  - dependent on preservative system
  - steam bath
  - expansion bath
  - extended vacuums w / break to ambient

# *Waterborne Preservative Fixation*

- Minimize chemical loss during exposure
- preservative specific
- retention level, temperature, air circulation
- accelerated processes
  - steaming
  - aqua-steaming
  - hot water bath
  - vacuum assisted ammonia removal
  - kiln drying after treatment

# *Migration Minimization*



- Efforts to study the mechanism of fixation
- test to verify BMP qualification
  - AWPA A3-11 Chromotropic Acid Test for CCA
  - new proposed method to test soluble copper level
- Allows measurable result to indicate fixation
- spray-rinse for waterborne surface residue removal
- Oil-type guidelines offered in AWPA M20-01
  - minimize migration in use

## *New Products / wood composites*

- Lack the historical treating info of solid wood
- Do not follow the accepted practices
- composite furnish changes characteristics
  - lathe and drying checks
  - shorter in length
  - internal voids
  - dry material with no moisture gradient
- treatability improves / 90 - 100% X section

# *Summary*



- No cookbook answers for modifications of the treating process to meet BMP's
- design according to proper use specification by recognized standards
- BMP requirement implies environmental concern

# *Recommendations from WWPI*

1. Specify appropriate material as defined in AWWPA Commodity or Use Category Standards.
  2. Specify material be produced in compliance with BMP's.
  3. Require assurance of production with BMP's.
  4. Provide on site inspection prior to installation and construct according to recommended practices.
- Forest Service "Guide for minimizing effect of preservative-treated wood on sensitive environments"

# *Future for BMP Material*

- Be selective in choosing production facility.
- Purchase from an accredited BMP supplier.
- Producing to BMP requirements will involve additional cost and time to produce.
- Success depends on consistent enforcement.
- If we, as an industry do not make BMP a quality standard for our products; we may miss the target and the opportunity for continued use.

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