KEY SUCCESS FACTORS from NEW ZEALAND and AUSTRALIAN SAWMILLING and WOOD TREATMENT COMPANIES

CASE STUDIES
WOOD TREATMENT INNOVATION for SOLID and ENGINEERED WOOD PROCESSING OPERATIONS

WOOD INNOVATIONS
September 2014

by HANS WARD
KOP-COAT

Case Studies

- Red Stag Timber, New Zealand
- Claymark Industries, New Zealand
- itreat Timber, Australia
- Fisher’s Timber Treatment, Australia
Common Key Success Factors

1. Core Values
   - Innovation
   - Efficiency
   - Growth
   - Quality
   - Leadership

2. Key People
   - Highly Experienced
   - Drive Change
   - Return Based
   - Team Work

3. Financial Base
   - Backing Depth
   - “Integration of Supplies”
   - “Integration of Customers”

4. Incentives
   - Rewards
   - “Ownership”

5. Integrity

Red Stag Timber

“A leading high quality, efficient producer of durable structural timber for New Zealand, Australia, and other markets.”
Red Stag Timber

“Innovation leading team with excellent backing to drive return based change.”

Innovations

• Scanning and Milling
  – Recovery
  – Speed
  – Quality

Red Stag Timber

“Innovation leading team with excellent backing to drive return based change.”

Innovations

• Continuous Drying
  – Efficient
  – Quality
Red Stag Timber

“Innovation leading team with excellent backing to drive return based change.”

Innovations

• Fingerjointing
  – Recovery
  – Quality

Innovations

• Durability
  – NZ H1.2
  – AS H3
  – NZ H3.2
Red Stag Timber H1.2 “Dry Boron” Time Line

2003  NZ 3640 H1.2
- LOSP
- Boron

Red Stag Timber Founded

2004  Red Stag Timber Commercializes New Technology TRU-CORE® Process
- Fully Penetrates Douglas fir and Radiata Pine
- Dry Wood, no Re-dry, Final Shape
- Heartwood and Sapwood
- Boron H1.2
- Spray with Activation
- Independent Commissioning and Audits

2006  Red Stag Timber accelerates TRU-CORE® Process
- Dip with Hold Time for Doug Fir
- Dip with activation for Radiata Pine

2008  Further Process Acceleration using Dip with Kiln Steam
- Dip with Hold Time for Doug Fir
- Dip with activation for Radiata Pine

2010  Further Process Acceleration using Pressure Vacuum

2014  Process Acceleration using New Plant Configuration

Red Stag Timber Innovations Development

1) TRU-CORE® Process Waterbased Azoles with Permethrin for AS H3
   - Fully Penetrate Douglas fir and Radiata Pine
   - Fully Penetrate Fingerjointed
   - Heartwood and Sapwood
   - No Re-dry, Final Form and Shape

2) CCA Penetration of Heartwood
Claymark Industries

“A world leading high quality, efficient producer of durable weatherboard for New Zealand, Australia, USA, UK and other markets.”

Claymark Industries

“Innovation leading team with excellent integration to drive return based growth.”

Innovations

• Integration of Supply

• Scanning and Milling and Drying Timber
  – Recovery
  – Speed
  – Quality
Claymark Industries
“Innovation leading team with excellent integration to drive return based growth.”

Innovations

• Integration of Supply

• Inline Scanning and Moulding Dry Wood
  – Recovery
  – Speed
  – Quality

Claymark Industries
“Innovation leading team with excellent integration to drive return based growth.”

Innovations

• Inline UV Cure Coating Technology
  – Efficient
  – Quality
  – Performance
  – 100% Solids
Claymark Industries
Innovation leading team with excellent integration to drive return based growth.”

Innovations

- Inline Treatment Technology
  - NZ H3.1 Standard
  - AS H3 Standard
  - BS H3 Standard
  - US UC3A Specifications

Claymark Industries
Time Line

2006  
NZ 3640 H3.1
- LOSP
- Boron

2008  
Claymark Commercializes New Technology TRU-CORE® Process
- Fully Penetrates Radiata Pine
- Fingerjointed or Solid
- Drywood, No Re-dry, Final Shape
- Heartwood and Sapwood
- 3 Treatment Programs for Markets NZ, UK, USA
- Flood with Hold Time
- Independent Verification

2010  
Claymark Commercializes New Technology
Chromostop™ Wood Tannin Control

2012  
Commercializes New Technology UV Coating

2014  
TRU-CORE® Process Acceleration Using In-line Treatment
Claymark Industries Innovations Development

1) TRU-CORE® Process Waterbased Azoles with Permethrin for AS H3
   - Fully Penetrate Radiata Pine
   - Fingerjointed or Solid
   - Heartwood and Sapwood
   - No Re-dry, Final Shape

2) Global Specification Treatment

itreat Timber

“A leading high quality, efficient treater of durable structural timber and engineered wood products for Australia.”
itreat Timber

“Innovation leading team with excellent integration to drive return based service.”

Innovations

- Integration of Customers
  - Local Timber and Engineered Wood Producers
  - Off Shore Timber and Engineered Wood Producers
  - Distributors and Retailers
  - Builders

- Durability
  - AS H2f
  - AS H2 (North of Tropic)
  - AS H3
  - AS H4
### itreat Timber Time Line

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>2009</td>
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### itreat Timber Innovation Development

1) TRU-CORE® Process Treatment of Millwork
   - Fully Penetrate
   - Heartwood and Sapwood
   - No Re-dry, Final Shape
Fisher’s Timber Treatment

“A leading high quality, efficient treater of durable structural timber and engineered wood products for Australia.”

Innovations

- Integration of Customers and Backing
  - Local Timber and Engineered Wood Producers
  - Off Shore Timber and Engineered Wood Producers
  - Associate Companies for Pallets, Nails, and Exports
Fisher’s Timber Treatment

“Innovation leading team with excellent backing to drive return based service.”

Innovations

- Durability
  - AS H2 (North of Tropic)
  - AS H3
  - AS H3 “Brown”
  - AS H4

Fisher’s Timber Treatment

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Fisher’s Timber Treatment Innovation Development

1) TRU-CORE® Process Treatment of Hardwoods with Water Based Azoles with Permethrin
   - Fully Penetrate
   - Heartwood and Sapwood
   - No Re-dry, Final Shape

2) Weight-in and Weight-out Quality Control of Each Packet of Wood Product

Common Key Success Factors

<table>
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<th>Core Values</th>
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