BIO-FIBER BATTs & BOARDS

Innovative Materials

Mark Bomberg
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A LITTLE HISTORY

• NU-WOOL CO., INC.
• Cellulose Material Solutions

Unique Process

Patent Pending
A LITTLE HISTORY

First Attempts at Making Something Different (from recycled paper)

Forest Products Laboratories

1993
• Year of Exploration
• Visited Manufacturer in France
• Visited Manufacturer in Italy
• Liked the Food in Italy Better
• Bought a Complete Line
• Line Arrives in States
• 6 Months of Assembly
• 2 Months of Fine Tuning
• 2 Months “Teaching” How to Run Paper
• Discovering the Product
  • Density
  • Fiber Blends
  • Acoustical - NRC and STC Testing
  • Thermal
  • Moisture
  • Structural Limitations

• Making Samples for Trials
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• Making Samples for Trials
• Selling Products (finally)
• Returning to Our Core Business
• Insulation Batts and Blankets
• New Problem
A NEW STANDARD

- A Product Without a Standard
- Used ICC-ES as a Starting Point
- Combined a Poly Batt and Cotton Loose-Fill
- Added Some Cellulose Tests
- Created a New Standard with ICC-ES and UL
- Listed with UL in Directory (R26300)
- 62 Firms Under Batts & Blankets
- Only Cellulose Material in UL Batt/Blanket Category
Test Standard

cellulose batts/blankets

ASTM C 518, thermal resistance
ASTM C 167, design density
ASTM C 1304, odor emission
ASTM E 970, critical radiant flux

ASTM C 739, corrosion resistance
ASTM C 739/C 1338, fungi resistance
ASTM C 739, moisture vapor sorption
ASTM E 84, surface-burning
Air Lay Machine

- Fiber
- Blending
- Opening
- More Blending
- More Opening
- Forming
- Bonding
- Laminate to Size
ecocell batt package
Basement Insulation
WHAT WE TRIED

• Office Panels
• HVAC Liners
• Acoustical Treatments
• Insulation Products
• Automotive Acoustical
• Movable Wall Systems
• Door Liners
• RV Insulation
• Prison Mattresses
• Ceiling Tiles
• Medical Coolers
• Underlayment
• Appliance Acoustic Pads
• Casket Liners
WHAT’S WORKING

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NEXT STEPS

• Discover New Fibers
• Balancing the Product
• Discover New Additives
• Make it “Greener”
• Double the Capacity