

# Deck Preservation NH DOT Pilot Program of Treatments

Northeast Bridge Preservation Partnership  
Manchester, New Hampshire  
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Steve Johnson, Senior Engineer

## Trial Project Location

Bridge between Piermont, NH and Bradford, VT with a failed thin overlay

## Statistics

- 352' single span Pennsylvania steel truss
- 20'-6" roadway width (curb to curb)
- Original construction 1929
- 1993 rehab installed a half-filled grid steel deck with lightweight concrete and a ½" experimental overlay

# 1993 Rehab Overlay application



# Existing Condition



# Trial Products

Quikrete FastSet Latex Modified DOT Overlay

Kwik Bond Polyester Polymer Concrete (PPC 1121)

# Deck Preparation



# Latex Modified Installation

October 9 & 10, 2014



# Slurry Application





# Placement



# Bull Floating



# Broom Finish – Phase 1



# Waiting



# 7° makes a difference

Sun

Shade



# Phase 2



# Phases 1 and 2 Complete



# Polyester Polymer Concrete October 28, 30, 31, 2014





# Our "Chemist"



# Methacrylate Primer



# Phase 1 Installation



# Floating



# Friction Sand and Tining



# Surface Preparation – Phase 2



# Phase 2 - Installation



# Phase 3 - Installation

Why aren't there any Pictures?

Oh, and did I mention that we ran short of material?



# Final Finish – Phases 1, 2, and 3



# 2015 Results – Polyester Polymer Concrete

Minimal cracking



# 2015 Results – Polyester Polymer Concrete

Some rust bleed through – was expected



# 2015 Results – Polyester Polymer Concrete

Some snowplow blade wear – also seen in Bradford



# 2015 Results – Latex Modified Concrete

Significant cracking in one location



# 2015 Results – Latex Modified Concrete

Hairline map cracking in numerous locations



# 2015 Results – Latex Modified Concrete

Minimal wear from snowplow blades



## Top 5 Lessons Learned

5. Not the right location for Latex Modified Concrete – Structure is too flexible
4. ½" Latex Modified overlay is difficult to place and doesn't allow tining – Use a thicker overlay
3. Fill deep grid depressions prior to placing Polyester Polymer Concrete Overlay to reduce potential cracking
2. Use a thicker Polyester Polymer Concrete Overlay to allow future sawcut grooving



## Number One Lesson Learned

- 1. CLOSE THE BRIDGE TO TRAFFIC DURING CONSTRUCTION !!**



Questions ?